

# American Aviation

The Independent Voice of American Aeronautics

JANUARY 15, 1943

## An Injustice is Being Done

ONE of the paradoxes of the war is the handicaps placed in the way of the Civil Air Patrol in the face of the truly magnificent job the volunteer civilian flyers are doing in their over-water submarine spotting operations along the Atlantic Coast. It is only natural that the pilots who risk their necks and lives in hazardous flying in single-engined lightplanes are beginning to question their lack of recognition and status in the war effort.

Organized within the Office of Civilian Defense as a means of putting private flying into active and useful war work, the CAP is headed by Army men and operated as an adjunct to the Army Air Forces. Yet the CAP has become an orphan, neither fish nor fowl, and constantly on the defensive in struggling to meet its minimum operating requirements.

Unpublicized except for brief announcements is the submarine spotting on the East Coast where the record of achievement is perhaps the greatest single exploit in the history of civil aviation. The flying statistics, in addition to results accomplished, are highly impressive, for the evidence is abundant that Nazi submarines have largely been driven away from our vital coastal sea lanes.

There is no doubt that the coastal patrol is the most exciting and important feature of CAP, but the 63,000 enrolled civilian members operating from a thousand airports throughout the country have built up impressive results in many other directions as well. Emergency transportation of serum, spotting of forest fires, locating crashed airplanes, flying food to stranded parties, guard duty at airports, and emergency transportation of vital war parts and important military personnel, are all in the records. And despite certain uninformed criticism, the CAP is not a draft-dodging scheme, for it has never asked for deferment for a single one of its members.

But with all this record of achievement on a volunteer basis, CAP has had an up-hill struggle to attain a status which would permit it to obtain necessary operating equipment. Low priority ratings have made spare parts for planes extremely difficult to get. And on over-water flights these civilians take heavy risks,

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Fortnightly Review



'Tomorrow's Transport'

First Details on the Sensational Lockheed Constellation, About to Enter AAF Service, Have Been Released.

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## Late Bulletins

### AAF Seeks Airways Control

Efforts are being made by the Army Air Forces to take over the CAA federal airways system, according to Washington sources, but Thomas Bourne, CAA director of federal airways, is stanchly opposing the move and it is not expected to be successful at this time. It is also understood that the Navy is opposed to Army control of the airways. The Army makes the claim that great increases in military traffic makes the change necessary at this time. Col. Sam Harris, AAF's director of flying safety, is promoting the move.

### PAA Forms New Division

Pan American Airways Inc. has organized a new subsidiary, Africa-Orient Division, with main offices at Miami. It is understood that discussion is underway with the Air Transport Command for regular contract service to China over the old trans-Africa route.

**Fight Ahead on Committees:** Shall there be separate standing committees on aviation in the House and Senate? That is the question promising to arouse more debate in Congress during the coming session than any other aviation subject now on the horizon. The matter won't be settled quickly because the committees which already consider aviation matters are fully as cognizant of aviation's rising importance and its probable post-war political power as those who yearn for membership on the new bodies.

Members of both House Interstate and Foreign Commerce Committee and Senate Commerce Committee contend they would be deprived of their functions. While most of the new Air Committee bills will be filed with the respective Rules Committees of the two Houses, members will make their own "trading" agreements to block action. This has been the case in past sessions of Congress. Another subject that will bring a scrap in the opinion of many on Capitol Hill is the proposal for some variety of unified air command which will come up again this session. Best opinion here, however, is that any such plan will meet ultimate defeat.

*Trend of The News*

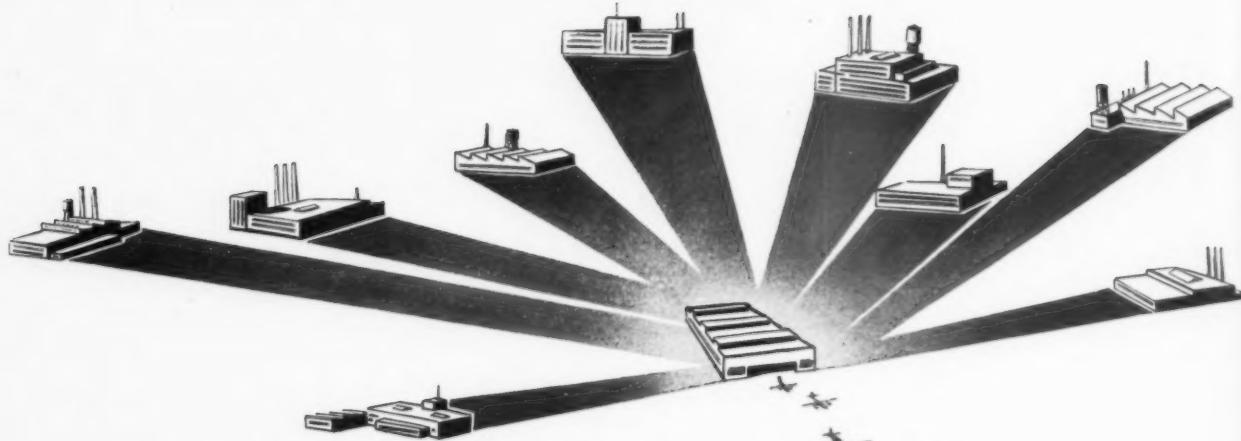
**Trouble in New Orleans:** Shipbuilder Andrew Higgins' splash into the aircraft industry is not expected to set any big records this year and well informed airmen are betting heavily that for one reason or another he will never turn out a production model. He starts from scratch without a plant or facilities in swampland under unfavorable circumstances. The AAF Materiel Command is unsatisfied because the President forced the contract against its better judgment. The City of New Orleans isn't looking forward to housing and transportation problems coming up. And Curtiss-Wright, which designed and is also building the Caravan, the ship Higgins is assigned, is disgruntled because Higgins monopolized the publicity for the new craft.

**Air Transport Command Howls:** Gen. George and his uniformed ex-airline officials who run the global Army Air Transport Command have been waging a vigorous war of their own for several weeks in protest over a recent AAF regulation which has set up the AAF Transportation Organization, headed by a Director of Traffic & Transportation. This group operates on a directorate level, which is one layer above the level of the ATC on the organization chart. Thus, many of the policy-making prerogatives of ATC are taken away from it by the new order. The new director, Charles Nielson, was formerly traffic manager for Vega Airplane Corp., and knows his subject. He is still a civilian, incidentally. He is charged with formulating and directing all AAF traffic and transportation policies, procedures, technical systems, and programs (by rail, air and inland waterways) except certain foreign shipments and non-air commercial movements, and is to coordinate all transportation control reporting systems of the various commands, and is empowered to maintain liaison with the Transportation Corps of the Services of Supply for planning all overseas water transportation facilities for

(Turn to page 6)

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# American Aviation

Vol. 6, No. 16

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WAYNE W. PARRISH, EDITOR AND PUBLISHER

ROBERT H. WOOD, EXECUTIVE EDITOR

ERIC BRAMLEY, MANAGER

DEPARTMENT EDITORS: Katherine E. Johnsen, (Legislation); Conrad Campbell (Manufacturing); E. J. Foley (Equipment); James L. Straight (West Coast); Pauline Perry (War Agencies); Fulton Catlin (News Assistant). On Leave with the Military Services: George Shumway, Leonard Eiserer, Charles Adams, David Shawe.

BUSINESS MANAGER, Thomas E. Lindsey

ADVERTISING MANAGER, THOMAS E.

### REGIONAL REPRESENTATIVES:

James L. Straight, Western Division Manager, Hollywood Professional Bldg., 7046 Hollywood Blvd., Los Angeles, Calif.  
Harry Brown, Midwestern Advertising Representative, 522 Briar Place, Chicago, Ill. Telephone: Lakeview 6704.  
O. R. Elorson, Eastern Advertising Representative, 2207 RKO Bldg., 1275 Avenue, New York, N. Y. Telephone: Circle 6-9446.  
J. Forecast, British Representative, Edwin Greenwood, Ltd., Strand, London, Thanet House, London, England.

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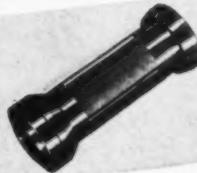
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## Trends

(Continued from page 1)

AAF operations. He is directed to establish field offices necessary for the movement of all AAF equipment and supplies, including personnel by air, and all traffic and transportation offices are under his direction. The new directorate was set up under command of the Chief of Transportation, Services of Supply, and for this there is spirited speculation over how much influence ambitious Somervell, SOS chief, is wielding over AAF Transport, including the

**Rails & Ships Plan Air Campaign:** Although not yet on the road, there are signs that the railroads and shipping companies are girding for a determined campaign which will enable them to enter air transportation. The CAB has effectively blocked such enterprise on the part of steamship interests since its American Export decision, and general feeling of executives is that if a test case arose the present Board would stand against them. Billions of dollars are at stake, and it will be a box office started.

**Wilson Urged to Play Ball:** High WPB sources say powerful influence has been and will continue to be exerted on both Wilson and Nelson to follow policies which will give the military all of what it considers necessary to carry on the war. Wilson was so amazed at some experiences with the Army his first month in Washington he was at the point of resigning. The struggle between the civilian and the war agencies will reach headline proportions at times but most bets are on Wilson sticking tight.

**British Navy Wants More U. S. Planes:** You may be hearing more publicity about the exploits of the British Navy's air arm from on. One of the purposes of the mission from England now visiting country is to wrest more U. S. planes from our production lines in competition with the RAF and the U. S. services. Strangely enough, Royal Navy is coming to us because it is even failing to receive its share of English aircraft. It hopes to procure as many American planes by end of 1943 as the U. S. Navy had at the beginning of 1942, Washington officers say.

**Anti-Trust Cases to Be Deferred:** The Department of Justice makes good its pledge recently to call off for the duration action on trust cases which the Army and Navy feel should be postponed. F. Amberg, legal adviser to Secretary Stimson, has had the Bendo case under review for several weeks, and is expected to suggest deferral. You can expect Justice to continue filing complaints, however.

**Secret Investigation at Wright Field:** The War Dept. is making every effort to prevent release of details concerning its investigation of contract practices at the AAF's Materiel Center at Wright Field. *American Aviation Daily* broke the story Dec. 30 that the quiz is being led by Col. William O'Dwyer, famed smasher of Murder, Inc., New York ring, who was District Attorney of Kings County until he joined the AAF as a major last summer. He was also Mayor LaGuardia's opponent in last mayoralty election.

**Washington Sidelights:** SOS Chief Somervell has ordered a ban on publicity concerning his four-week orientation courses in Army organization and procedures he gives specially selected "business and professional leaders," all civilians, at the Command and General Staff School at Leavenworth, Kan. Real purpose of the courses has not been disclosed. Several Congressmen are showing concern at charges made by National Aviation Training Assn. that Army's failure to allow repair and maintenance parts to be sold civilian pilot training schools is resulting in planes "breaking down on airports all over the country . . ."

British Overseas Airways has taken over an unannounced quantity of Catalina flying boats and is modifying them as seven-passenger liners. BOA has only the three Boeing clippers it bought from PAA in the big flying boat class, Washington officials tell those who are rumors of an increase in trans-Atlantic activity by the British airline . . . CAB and State Dept. are having their troubles over the international problems inherent in deciding who (and who won't) receive airline rights in the Caribbean. Lowell Yerex, a British national, has airline properties in Guatemala and Honduras, and has set up a Brazilian company which seeks entry to this country. State fears a British network if it gives Yerex a green light, yet hesitates to rebuff Brazil. Then there are the Dutch, several native West Indies lines, and the U. S. companies clamoring for certificates.

Bob Wren

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# Editorial

(Continued from page 1)

flying as they do in all sorts of weather and conditions in single-engined put-puts, with wholly inadequate safety equipment (or none at all). The many promises made to CAP have rarely been fulfilled.

Here are excerpts from a letter by a CAP pilot that tell the story more pointedly than we could hope to do:

"I am primarily writing about the gross injustice which is and has been done to the pilots and observers who every day since the coastal patrol began, have been flying whenever the weather would permit over the vast Atlantic Ocean. . . . I want to point out that there are certain things to which any citizen of this country is entitled and which are being denied to these men who are daily risking and giving their lives in the defense of their country. . . .

## Not Draft Dodgers

"I don't know the reasons but I assume it is politics and the fact that our own Washington leaders are in the Army and don't care about us. Meanwhile the tail that wags the dog is kicked around and as a result a great injustice is being done. Nearly all CAP coastal patrol personnel are on duty for the duration so I am not talking about draft dodgers. For the most part you will find that the average pilot is a married man and has a couple of kids at home.

"For some reason or other he didn't meet the Army or Navy flight requirements when the coastal patrol began so he joined CAP. He could have gotten a good Air Force commission, but he didn't want to sit at a desk if he could fly, so off he went to a CAP base and in most cases he is still there despite the fact that he can now meet the much lighter requirements of the Army or the Navy. Why is he there? Because he knows that he is doing a very necessary piece of war work, that his experience and training in this field is valuable and that it shouldn't be wasted. He also feels that someday the government will do the right thing about him.

"I am one of those guys. I have a wife and two kids. When the subs were going down our Atlantic Coast sinking our merchant ships right under our noses I thought that there was a job that I could do to help stop it. I had a plane of my own and I had plenty of flying time under my belt. Incidentally, I had a very good business which I decided to neglect and have ever since that first day. After I had been on patrol a few weeks I decided to stay a few weeks more because I saw very vividly how badly we were needed. And I am still there. I have signed up for the duration. We are just as needed now, if not more so, than before. If the enemy ever thought that we were going to be withdrawn they would be back here before we were even back home.

"In good weather and bad, in single-engined planes from 90 to 225 horsepower, I have flown over water out of sight of land for more than three hours at a time and I don't mind it at all. I like it. But I have begun to wonder about a few things because it seems to me that the country has reached the point where it might see to it that justice is done to us. I want to know why we don't have the following things, all of which the Army and Navy have and to which we as U. S. citizens should be entitled.

"1. *Two-man life rafts.* These have been promised for months and each plane should have them. Some of our men would be living today if they had been provided with life rafts.

"2. *Winter flying clothes, Very pistols, side arms, waterproof flash lights, etc.* The only thing we have is the ordinary 'Mae West,' the type the Navy uses. We only got these after it was hard to see our men when they were swimming around in the water in those green kapok jackets. In other words, why should we be forced to take risks that we don't even ask

our boys in the services to take when they fly with two even four engines before them. Why take unnecessary risks? Incidentally, I wouldn't even ask for a parachute because I don't need them, but the Army won't let its pilots fly without them.

3. *Life insurance.* Why should I be content with \$3,000 insurance if I am killed carrying out my duties, when service men get the right to carry \$10,000? Why should I be content with accident insurance that only covers me if I am in an airplane accident while on a mission. If a propeller cuts my arm off, shouldn't I be cared for?

4. *Compensation.* This never was very important to me because I am fortunate to have other income, but the average guy in CAP coastal patrol has nothing but his per diem which is \$8 per day if he is a pilot and \$7 per day if he is an observer. He is now given one day off each week with pay for 72 hours total leave each fourth week, but if he wants more than that he gets it at his own expense. Neither the Army nor the Navy plays ball that way. As far as compensation is concerned it is lower than a 2d Lieut. in the Army with flight pay. CAP pilots are all 1st Lieuts., yet the pay they get is the \$8 per day and that holds even if they are promoted to a Captain as quite a few have.

"There are many other problems of minor nature such as the silly uniforms we have to wear with the red shoulder straps that attract so much attention, and the fact that our story is kept quiet that most people think we are draft dodgers and millionaires making a fortune using their own planes. As it is, most of us are not even below 3A in the draft, have little money outside of what we get on the per diem, and very few of the pilots own the planes being used. . . .

## 'Too old to hold together'

"But right now CAP is threatened with an unfortunate situation which actually may mean its end. All of the above difficulties have and can be surmounted by that old American quality known as guts. Our boys have what it takes and whether they have ever done them or not they will stick it out to the bitter end but they can't fly planes that are just too old to hold together. And they can't fly perfectly good planes with engines that don't run because we can't get certain parts. The planes are wearing out very rapidly and the replacements that had been counted upon have either been bought by the Army or Navy or the contractors. Furthermore, although our safety record is good under the circumstances, we have had quite a few accidents involving complete or temporary washouts.

"What with priorities and everything, a plane that could be repaired in one month often takes five. As to parts it's the same old story. Every time our representatives go to WPB they probably have to explain that the word CIVIL doesn't apply to us. Well, I say if it doesn't apply then why not let's go whole hog and be a part of the Army or Navy."

The letter tells its own story. Only in respect to the CAP Army leaders would we disagree, for the CAP leaders are only aware of the difficulties under which the coastal patrol operates. Perhaps the answer is CAP's dual sponsorship; it is part Army, part a civilian defense agency. In wartime under heavy pressure, buck passing is an easy way out when duties and functions are not clearly defined. But something needs to be done for CAP, for its coastal patrol is a job that cannot be accomplished successfully by fast-flying and high-altitude military planes. CAP has been lost in the vast shuffle of war and its needs to be picked out of the red tape barrel and kept operating at top capacity.

(Other Editorials on page 10)



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# Editorial

(Continued from page 1)

## The New Member

**J**OSHUA BRYAN LEE, having been defeated for re-election to the Senate by the citizens of Oklahoma, has been nominated by the President to fill a one-year existing vacancy on the Civil Aeronautics Board, and presumably will be confirmed in due course by the Senate of which he is no longer a member.

Mr. Lee's record in aviation is quite vague, ranging from his dislike to riding in airplanes to his rather inexpert conduct last fall of some air cargo hearings in the Senate. But we feel it incumbent upon ourselves, nevertheless, to welcome Mr. Lee to the fold, as we have done many others in the past, and wish him (and the industry) luck. In welcoming Mr. Lee we recall others who were given opportunities to serve aviation and the nation. There was Edward Noble, the Life-Saver business man, who never got away from the post. There was Robert H. Hinckley, who favored the breaking up of the Civil Aeronautics Authority. There was Clinton M. Hester who had perhaps the greatest of all opportunities for leadership and who stumbled in the first quarter-mile. Then there was G. Grant Mason, now a Colonel in the Army Air Forces, who really tried like mad to get something done but was over-run with opposition. And let's not forget George P. Baker who seemed like a fine action-minded chap who surprised everyone by secluding himself in judicial robes and sat around waiting for business to come in.

Mr. Lee has an opportunity to do a job, as the others have had before him, and until he proves that we should do otherwise, we want to wish him godspeed. As for advice, we suggest he read carefully the Civil Aeronautics Act of 1938. We suggest he not fall into the pitfalls often created by awesome judicial robes, and we believe he would do well to look upon the Board as an administrative body fully authorized by Congress to take initiative, to act courageously, and to promote and regulate air transportation in the broad interests of the nation. He will find support in this from Mr. L. Welch Pogue, who to date has been the finest exponent of what we believe to be the real purposes of CAB and of the Act which created it.

## Lees Moves to D. S. C.

**U**NSUNG heroes are frequent in the vast, sprawling government service. They are men who weld their knowledge and understanding of private industry with the public needs and interests, and refuse to permit the lethargy and stultification which so often characterizes government service to dampen or hold back their genuine enthusiasm for constructive accomplishment. Aviation has been singularly fortunate in having a few men in important government posts working in the best interests of industry and nation. One of these is Robert E. Lees, who has left the important post of chief of the aircraft priorities section of WPB to join the Defense Supplies Corporation which is planning the shipment of rubber by air from South America to this country. Few in private industry have been privileged to know first hand of the multitude of battles won for aviation by Lees—battles which could so easily have been avoided or evaded by less conscientious public servants. Aviation owes much to this quietly effective man who believes—and works for—the future of the airplane. We take this opportunity to wish him well in his new post.

## Throwing Off the Mail

**A**IR mail will again soon be a national scandal unless something is done to give it a priority worthy of its name. Air mail is being "dumped off" at many points in the nation today simply because it was orphaned by the President's directive

creating priorities. In Canada the air mail has absolute unconditional No. 1 priority over every other class of patronage. In the United States air mail is being accorded last position in line, even sometimes after non-priority passengers.

Washington, Atlanta, Dallas and Chicago are critical of overload in the air mail system today. Air mail is requiring days to reach the west coast from the east instead of the normal two days. Reports of mail being left behind are piling up in the Post Office Department. The public and the war effort are not being given a fair deal. Most of all, the present situation is the antithesis of the old theme that the mail must go through.

Who's at fault? Perhaps first of all the responsibility lies with the Postmaster General, Mr. Frank G. Walker. It is true that the Post Office Department was omitted from the priority list, but this does not excuse Mr. Walker for not exercising his authority as the chief postman of the United States. Air mail does not have a priority, the Post Office Department has the right to demand one. If it doesn't rate a Class A priority, it should certainly demand and obtain a Class B. There are others who are at fault, but the focal point is the Post Office Department itself, and the airlines, the Civil Aeronautics Board and the Army, should get busy and keep the mail flying. The war effort demands it.

## —And Now Spare Parts

**A** N ACUTE pending shortage of spare parts is dogging the trail of the harassed War Training Service (formerly known as Civilian Pilot Training Program), and the hard-working and self-sacrificing Civil Air Patrol. Within the last month or so, many hundreds—and perhaps thousands—of training and CAP planes will have to be grounded unless the bottleneck is broken.

Six months ago the training operators faced a shut-down because their facilities were not being used. Today they have an abundance of training work, but red tape has tied up spare parts beyond their reach. The spares are in existence, but until someone breaks through the maze of Army obstacles, they can't be distributed to WTS operators. A natural consequence of the parts shortage is a lowering safety record and groundings of planes that should be kept in the air.

As for CAP, the spare parts shortage is looming up now. These hundreds of priceless lightplanes which have been an extraordinary war job must be kept in the air at all costs. CAP has been a stepchild of the Army since its launching, and has had to fight for every small dispensation, and is worthy of more recognition than has been accorded. CAP volunteers have spent large sums of private money to keep this vital war unit in operation. It is time some government agency, or the Army, gave some serious thought to keeping the trainers and lightplanes in the air.

## What Others Say

**MAJ. A. P. DE SEVERSKY**—"The most reassuring fact in the first year of the war is the emergence of our airmen as supreme fighters."

**AL WILLIAMS**—"Airline passenger transport is complementary to rail facilities, not competitive . . . The huge dirigible or transport with tonnage-carrying capacity is likewise not competitive with the steamship lines. It is complementary . . . The bulk of the world's goods is being carried, and will be carried for some time to come, in 'rains and ocean-going steamships.'

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Somewhere tonight American paratroopers are dropping  
silently to earth. Their safety depends on a multitude of  
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The thunder of hoofs along a dark road, as Paul Revere sped from Lexington to Concord, once awakened the world with a warning . . . but within that ominous warning a promise also glowed. "Liberty is in peril," cried the warning. "But the forces aroused to save liberty will build a new world," spoke the promise.

Our fathers heard the thunder before daybreak . . . and their answer to its challenge brought the dawn of American democracy that is our heritage of freedom.

Now we hear the warning . . . this time from the skies . . . as above a world pitted with the scars of battle, the great planes thunder on. No land or sea is beyond their range as liberty is again imperiled . . . as enslaved peoples everywhere look to the heavens in hope of liberation.

And each resounding blow our airmen strike for victory echoes the prophetic promise of the dawn of a greater day. A dawn in which the airplane will cement the foundations of world brotherhood and weave

the texture of new fellowship among men, in which today's weapon of destruction will symbolize the outstretched hand of peace.

In doing our part to help attain this end, we of Chicago and Southern Air Lines are flying first in the service of the nation. And in this way we serve your future too. For while tonight's thunder warns of a war that must be won . . . the dawn to come promises a richer life, greater achievements and inspiring new horizons for us all.

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# Constellation Readied for War Transport

## TWA May Fly New Plane for Air Forces

THE Lockheed Constellation, designed by Lockheed Aircraft Corp. from original plans by Howard Hughes for TWA, completed its ground tests and is expected to go into service shortly.

It is to be faster than a Jap Zero, the huge four-engined transoceanic, which Lockheed calls "tomorrow's transportation," will probably be operated for the Air Forces by TWA. It has been designated the C-69.

Because of military restrictions, all statistical data on the plane has not been released. The ship is known to have four 2,000-hp Wright 3350 engines, and is equipped with three-bladed Hamilton standard quick feathering hydrodynamic propellers. Static height is 18 ft. Landing speed is about 77 mph.

Although commercial development of the plane is not possible at this time, Lockheed points out some possibilities:

In a future peacetime role as a high-performance luxury liner of the air oceans it could carry 55 passengers and a crew of nine nonstop from Los Angeles to New York in record time—or, under today's nonstop procedure with frequent refueling stops, it could fly 60 passengers across the country for less

than railroad rates . . .

"At cruising speed at about half power the Constellation is approximately 100 mph faster than standard air cargo or airline ships of today, while eliminating most of the time lost in fuel stops."

The ship is able to cruise through thin air at 20,000 ft.—above 90% of all rough-air weather disturbances, and with ample reserve fuel to fly around most of the others, it is said. The pressurized cabin will maintain air density of the 8,000-ft. level, "and in case of need the Constellation can rise comfortably to 35,000 ft."

Ceiling on three engines is 25,000 ft.; on two engines, 16,500 ft.

### One Gallon Per Mile

The plane will fly its full load "using one gallon of gasoline per mile . . ."

Its speed, range and load-lifting ability ("it will fly a light tank and its complement of troops across an ocean") all are inherited directly from the Lockheed "Lightning" P-38 fighter, the company states, adding that aerodynamically the Constellation's wing is an enlargement of the Lightning's.

Fowler flaps reduce landing speed and a new "maneuvering flap" gives the plane three distinct sets of performance characteristics, it says.

"With flaps telescoped into the wing, the ship is a speed and distance champion; the maneuvering flap increases the lift of the wing so that the Constellation will climb rapidly out of a short field, or maneuver at slow speed during icing conditions or bad weather; and the landing flap brings it in to the airport at reasonable automobile speed.

"Another aerodynamic advance is

the engine nacelle and cowling, which make it possible to house and cool 2,000 horsepower with no more drag than recent aircraft required for 800 horses. This is a complex matter involving a smaller inlet area and better curvatures from the nose into the wing. Just as noteworthy in the nacelle design is the grouping of connections which makes it possible to change a Constellation engine in 45 minutes, instead of the full day once required."

Amazing safety features, unheard of not so long ago, include:

"Stainless steel engine nacelles and cowlings, within which a fire would be confined for 30 minutes without interrupting flight or causing serious damage."

"Automatic fire-control system with 16 thermostatic couplings in each nacelle, advising the Flight Engineer where to operate his remote-control fire extinguishers."

"Dual brakes on the dual wheels of the landing gear, practically eliminating the possibility of brake failure."

### New De-Icer

"The 'hot wing' de-icer as developed by Lockheed, using engine exhaust instead of pulsating de-icing boots."

"Hydraulic boosters on all controls for the first time, eliminating pilot fatigue because he exerts only a small fraction of the effort required to move the control surfaces."

"Short take-off and landing runs and unique maneuverability at slow speeds, due to the double-acting Lockheed Fowler flaps."

"Pressurized cabin with two separate superchargers, either of which will maintain correct air density."

"Reserve range for flying around severe storm conditions."

"Triple tail, giving better control especially after partial engine failure by placing control surfaces directly behind and between the engines."

"Passageway in wing, permitting the Flight Engineer to reach all four engines in flight."

"Excellent flight performance on two or three engines."

"Sturdy tricycle landing gear with steerable nose wheel."

Discussing other features of the ship, Lockheed states:

### Interchangeability

"The power plant installation has been designed with particular emphasis on the maintenance and serviceability aspects. In order to achieve this, particular attention has been paid to the use of interchangeable engine installations, quick disconnect of all electrical and plumbing lines at the firewall and the design of oil cooler flaps, cowls, carburetor ducts, etc., as integral assemblies. It is therefore possible to make a complete engine installation in approximately 45 minutes by changing the complete power plant assembly forward of the firewall."

"The following specific parts are jig built on production airplanes to insure they may be exchanged from one airplane to another in service: wing tip, aileron, wing flap, all trimming tabs, stabilizer, elevator, all parts of the exhaust disposal system, all seats and berths and equivalent parts, fin, rudder, outer and inner wing panels, landing gear, all removable cowling, all engine cowls, all carpets, including fastening.

"Every effort has been made to reduce the number of left and right hand parts to a minimum. The following parts are identical, so that they may be used either right or left: removable engine mounts, exhaust collector rings, stack and tailpipe back at least to vicinity of firewall, engine cowls, removable nacelle cowling, elevators, landing

(Turn to page 23)



*The Constellation—Faster Than A Jap Zero  
Can Fly 55 Passengers Los Angeles-New York Non-Stop*

# Lea Proposes Postwar Transport Planning

## Suggests 17 Changes in Aviation Laws

**S**WEPPING changes in the laws affecting civil aviation, designed to place the industry in readiness for post-war expansion, have been proposed by Congressman Clarence F. Lea (D. Cal.), chairman of the powerful House Interstate and Foreign Commerce committee, and it is probable that hearings on his proposals will be held during the early part of 1943.

Altogether, 17 legislative proposals, covering a wide field, have been made to the House by Cong. Lea.

Because they come from a committee which not only deals with aviation but also to a great degree controls the destinies of all other forms of transportation, and because Cong. Lea has been one of aviation's strongest boosters in Congress, the proposals carry a great deal more weight than if sponsored by some other Congressional group.

The 17 points, submitted in question form, which Cong. Lea said "merit consideration" are:

1. Should the Federal government extend to the constitutional limit its power to regulate both the safety and the economics of commerce by air? (It is felt, Cong. Lea remarked, that the Federal government may constitutionally exercise jurisdiction throughout the entire navigable air space.)

2. So far as economic regulation of air commerce is concerned, the Civil Aeronautics Act is limited to common carrier operations and the transportation of mail. Should such

regulation be extended to cover contract carriers, in order to avoid cut-throat competition and to promote sound development?

3. Should provision be made for certificates of convenience and necessity, under special regulations, for feeder airlines as distinguished from the principal trunk lines?

4. Should the Federal government be given the power to control the height of structures adjacent to airports used in air commerce? And if so, under what conditions?

### Multiple Taxation

5. Should Federal action be taken to avoid the dangers of multiple taxation of air transport enterprise and to minimize the growth of interstate impediments to commerce which have appeared elsewhere?

6. Should there be a Federal statute defining the liability of air carriers to passengers and shippers and to persons on the ground in the event of personal injury or damage to property?

7. Should Federal legislation be adopted which will specify which law will govern in the event of injury or death of air carrier employees?

8. Should insurance be required of air carriers?

9. Should the Federal government exercise control over aviation insurance?

10. Is Federal incorporation of air transport companies, particularly in the case of cargo operations, desirable in order to facilitate operations, regulations and development?

11. Should aircraft operators be exempted from Federal gasoline taxes?

12. Should there be a greater measure of Federal encouragement of private flying, aviation education and aviation vocational training?

### Airports

13. Should there be a more coherent and stable long-range program of airport construction?

14. Should the pilot and co-pilots of a passenger airplane be given powers with respect to the conduct of their passengers to preserve peace, order and safety comparable to the powers exercised by the captain of a vessel?

15. Should the regulation of rates affected by the Civil Aeronautics Act for foreign air transportation be extended in any way?

16. Should limitations be placed on present free-pass privileges?

17. Is it necessary or desirable that the duty of the CAB to grant rehearings on its decisions be more clearly defined?

All responsible sources will not only be heard by the committee but will be invited to submit their own proposals.

When queried, air transport officials were cautious in commenting on the Lea proposals, principally because they have not had an opportunity to study them thoroughly. One spokesman pointed out, however, that Cong. Lea is well regarded in the industry.



Cong. C. F. Lea

made more difficult by practical conditions which will surely develop in the meantime.

"Fortunately, conflicting vested interests in aviation are at a minimum and it is possible to consider the adoption of measures for it which later or more broadly applied might be difficult or impossible of realization."

On the future of air shipping, Cong. Lea commented: "Where surface transportation is available, the time element does not predominate, surface transportation probably holds the field."

### Discusses Rates

"The rails carry commodity car-load shipments for an average of less than 1c per ton-mile, which is the cheapest rail transportation in the world. For less-than-carload shipments, the rate is probably 7c per ton-mile. Trucks originally carry freight for 3c or 4c a ton. Ocean transportation under normal conditions is materially less than carload freight rates. Inland water transportation for certain companies is materially under land transportation rates."

"Air transportation is rapidly advancing in economy and efficiency but its present cost has been estimated from 15c to 20c per ton-mile. It is not improbable that after the war, peacetime conditions will within a reasonable period will reduce transportation to, say, 10c per mile."

"Every reduction in the cost of transportation broadens the field of traffic for which the airplane economically compete."

### Top War Production Officials Schedule Tour

Charles E. Wilson, WPA chairman in charge of production and chairman of the Aircraft Production Board, was to have his field contact with the aircraft industry in a tour scheduled to start on January 11 to the West Coast.

The trip, which was to be made in a transport, was organized by Maj. Gen. O. P. Echols, commanding general, AAF Materiel Command. Lieut. Gen. William Knudsen, War Department Production Chief, Rear Admiral E. B. Davison, assistant chief of Bureau of Aeronautics and Navy representative on the Aircraft Production Board, and T. P. Wright, Director of ARCO (Aircraft Resources Control Office) completed the group.

Itinerary included stops at New York, Fort Worth, Dallas, San Antonio, and Los Angeles. At a later date, Mr. Wilson plans to visit the coast manufacturers.

While away the party visited Vultee, Consolidated, North American, Lockheed, Douglas, Northrop and the Headquarters of the Western Forces Procurement District in Los Angeles.



**Loading Up:** A TWA DC-3 takes on vital war cargo which will be speeded to its destination. Airline express traffic is breaking all records. Cong. Lea suggests possible Federal incorporation of air transport companies, particularly in the case of cargo operations.

# Senate Congress Committees Chart Inquiries; New House Aviation Group Unlikely

By KATHERINE JOHNSEN

WHILE party representation on committees is argued, new Congressmen seek "assignments, the old-line members in the new Congress indicated: "Whereas which may vitally affect aviation industry during coming year.

A resolution approved before the Congress ended discontinued investigating committees in the Senate except the Byrd committee and the Joint Committee to Reduce Non-essential Federal Expenditures which was set up by public law. Establishing resolutions will less-than-ever be presented for Senatorial approval for Bennett Champ trucks, investigating air crashes, or 4c a ton Harry Truman's (D. Mo.) under investigation to Investigate the National Defense Program.



Cong. Jack Nichols

House committees in the 78th Congress promise a continuation of last year's investigating activities, with the exception of Rep. Jack Nichols' (D. Okla.) Committee to Investigate Air Accidents, whose life-span is indeterminate.

Chairman Carl Vinson (D. Ga.) of the House Naval Affairs Committee, will swing into full action investigation of profits and discrepancies on Naval contracts.

Naval officers will assist in the investigation while William Shaughnessy, who became counsel of the investigating group last year on the death of Edmund M. Toland, will continue in his post for the aircraft in present, at least. The Committee's record is anti-organized labor and anti-proteering. It can be duly accredited with giving the first impetus to the renegotiation policy on Naval contracts, commencing in the famous Jack and Heintz hearings before the committee.

On the House Military Affairs Committee, it appeared that Rep. Matthew Merritt (D. N. Y.) would replace outgoing Dow W. Harter (D. Ohio), as head of the aviation investigating subcommittee, although Rep. John Costello (D. Cal.) was a contender for the post. Costello was pushing his case, Merritt had seniority rights and his announcement that he definitely wanted the position seemed almost conclusive. Costello was an active member of the subcommittee last year, Merritt was not. The Military Affairs subcommittee will investigate the aviation

defense program as a whole, without the concentration on profits on Army contracts that is made by Naval Affairs in its investigation. The group in the past has staunchly defended military aviation, particularly against the Senate's Truman Committee.

## Future Dubious

The future of the Nichols committee is dubious. A resolution may be introduced to continue it for another year or to continue it only long enough to wind up present business. Strong pressure will be brought by Democrats and Republicans alike to end the Nichols' committee when and if a long continuing authorization is sought. Although the group has regularly reported to Congress on crashes and made legislative recommendations, many congressmen are convinced that the committee's work is a "lark".

Members of the House Interstate and Foreign Commerce Committee generally feel that Nichols committee continuation is not warranted, that its activities are a duplication of CAB investigations, and now that the stress is on military aviation an appropriate time for its cessation has arrived.

Members of House Interstate will take the lead shortly with hearings on 17 proposed changes in civil aviation legislation, many of which were recommended by the Nichols group in the 77th Congress. House Interstate, with its standing aviation subcommittee, can investigate with hearings and actually follow through with legislation, whereas the Nichols group can only recommend.

## Want Special Group

Current talk among members of the Nichols committee is to seek funds from Congress for a special committee to study aviation, a more comprehensive proposition that may be an intermediate step to establishing a standing committee on aviation at a later date.

The members are generally convinced that a standing full committee on aviation should be established. Although some might make an effort, it appears practically conclusive that no such step will be taken by the House in the near future. Not only does it meet with the objection of members of House Interstate, who see no more reason for a special standing aviation committee than for a standing committee on railroads, but also with the objection of Military and Naval Affairs committees who see no more reason for it than for a standing committee on battleships or ground forces.

The Tolan Committee (House Committee to Investigate the National Defense Migration) will continue its investigations, which in the past have resulted in action rousing reports to assure civilian control of civilian aspects of the war. In collaboration with Sen. Pepper's (D. Fla.) standing subcommittee of the Senate Education and Labor Committee this Committee can be expected to direct such congressional legislation as there may be on realignment of war agencies and to mobilize strong Congressional sentiment that agencies should be established by legislation rather than executive order.

## Truman Assured

The Truman Committee's continuance appears assured. Comprised of an energetic group of Senators, the Truman pryers are sometimes resented but generally accredited as unfailing watch-dogs of the defense program. They are the promoters of Kaiser, the past critics of the Army's fighter aircraft, the staunch advocates of civilian control over procurement, and Chairman Truman is pro small business and anti dollar-a-year men. Indications are, though, that the Truman group will make no reports or investigations in the near future which will be of vital concern to aviation.

The Byrd Committee will ener-

getically take up the President's directive to the new Congress to cut non-defense expenditures and go one better by aiming to cut certain types of defense expenditures, such as eliminating unnecessary defense agency employees. Cutting government red-tape and eliminating unnecessary personnel dominates the thinking of the Byrd group. They will continue with pressure to cut government questionnaires imposed on industry.

The Senate's Air Safety Committee, established in honor of the late Sen. Ernest Lundeen, by Sen. Clark (D. Mo.) will require Senate approval for continuation. The committee to date has made no report on air crashes, is still working on a "comprehensive report", and is composed of a small staff.

## Senators Concerned

### By Army Air Crashes

Army Air Forces training plane crashes are provoking concern among members of the Senate Military Affairs Committee who appear convinced that training fatalities are mounting too rapidly.

Six months ago when members of the Committee proposed to investigate Army training crashes, they were dissuaded by officers who protested that Congressional hearings would create demoralizing publicity and argued that the causes and preventatives for training accidents were being so developed that percentage decreases in crashes could be expected.

Members of the Committee now feel that the Air Forces have not solved the problem, and there are indications that the situation will be investigated in closed Committee hearings.

The feeling among the Senators is that the Air Forces training program promotes cadets to high-powered planes too rapidly and puts them in planes "with too many gadgets for the novice."

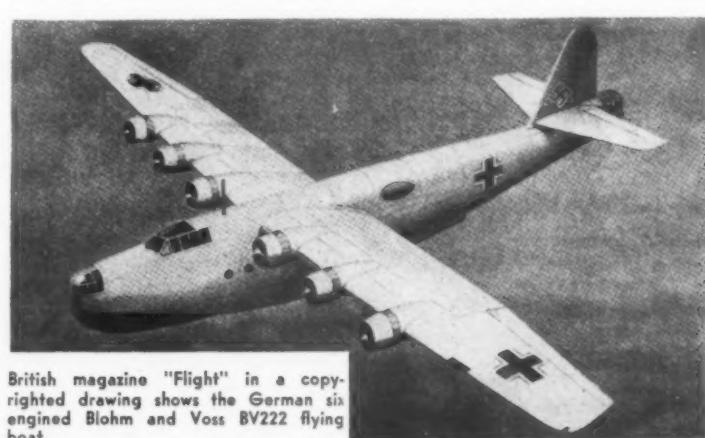
## British Air Mission

### Visits U. S. to Confer

A British aircraft engineering mission, consisting of 12 leading British technicians, is now in the United States at the invitation of the government, to confer with aircraft officials and producers on coordination of British and American technical practices, according to the Office of War Information.

Sir Roy Fedden, special adviser to the Minister of Aircraft Production, heads the British group, which includes: J. Lloyd, S. P. Woodley, I. G. Duncan, C. G. A. Woodford, W. Tye, D. M. A. Leggett, N. S. Muir, W. W. Downing, M. B. Berks, B. G. Markham and H. Tiltman.

Col. R. C. Wilson and Col. Howard G. Bunker of the U. S. AAF, Lieut. Nicholas Ludington of the U. S. Navy's Bureau of Aeronautics, T. P. Wright and Grover Loening of the War Production Board, and E. P. Warner of the Civil Aeronautics Board are attached to the mission during its visit here.



British magazine "Flight" in a copyrighted drawing shows the German six engined Blohm and Voss BV222 flying boat.

# Navy's Switch To Landplanes & Bases Duplicates Army, Congressmen Claim

**DISAPPROVAL** of the Navy's greatly-augmented program for mass construction of land-based plane facilities is being voiced by members of the aviation subcommittee of the Military Affairs Committee in the House, who claim that "the Navy is duplicating Army Air Forces expenditure and effort."



Sen. Brewster  
member of the Naval Affairs Committee.

"Of course it is the function of the Army to control the land, but the Navy is not entirely recognizing that," Brewster points out.

The Navy's program for construction of aviation shore facilities is a follow-up of its recent procurement of land-based aircraft on a large scale. Until the outbreak of hostilities, the Navy used land-based planes only for patrol work. It is now procuring four-engined B-24 bombers formerly scheduled for the AAF. Secretary of the Navy Frank Knox has disclosed, over protests of the Army Air Forces, which needs every such plane it ordered.

The about face of the Navy, which today contends that land bases and land-based planes are part and parcel of the fleet, will force future consideration of these questions. Should the Navy follow through on its contention and develop a large scale land-based aviation program, or should the program's development remain a responsibility mainly of the Army Air Forces, as it has in the past? Or, where should the line be drawn between the Navy and Army land-based programs?

## Harter Comments

"I know it is the feeling of the men on my committee that there is duplication of AAF installations by the Navy in its eagerness to obtain land-based plane facilities," the outgoing chairman of the Military Affairs investigating subcommittee, Dow W. Harter (D. Ohio), asserted.

"Congress should be continuously alert and scrutinize very carefully requests for additional funds that might be for the construction of facilities that would be additional duplication of what the Army al-

ready has," he points out. "There should be the fullest coordination of War and Navy department construction programs for air so as to save taxpayers' money and at this time materials and labor."

## Funds Questioned

Last June the Navy succeeded in getting an additional authorization of \$339,000,000 for aviation land facilities although the Bureau of the Budget recommended an authorization of only \$175,000,000. House members questioned the advisability of over-riding the decision of the Bureau of the Budget, which makes its recommendations from the over-all consideration of the President's own program.

Chairman Carl Vinson (D. Ga.) of the House Naval Affairs Committee, convinced House members to vote the authorization, however, on the principle that it is better to take the advice of Naval men than that of the Bureau of the Budget.

The Navy did not return to Congress for an appropriation, but Admiral B. Moreell, Chief of the Bureau of Yards and Docks, reports that the Navy launched the program authorized "with funds already available."

Concurring with Harter, Rep. John Costello (D. Cal.) third ranking member of the Military Affairs Committee, asserted that "it apparently is the design of the Navy to duplicate Army effort, and the duplication only means unnecessary expenditure."

Costello also expresses objection to the Navy's plans for constructing schools and training vast numbers of flyers for land-based aircraft.

He states: "The Navy's program for training 30,000 pilots compared with the Army's program for 40,000 this year, contemplates mainly the training of flyers for land-based aircraft—as is evident from the fact that the Navy's aircraft carriers do not warrant a pilot training program of any where near this size."

Training aviators for land-based planes, Costello contends, is logically a task for the AAF which has had a long established program, has the personnel and equipment at hand, and can do the job better.

"The Navy was too slow in getting its land-based aviation program underway and at this late date should not be encroaching on Army effort," he states.

The allocation of land-based aircraft between the Army and Navy now is decided by the Joint Chiefs

of Staff, according to the needs of each service. However, the position of Sen. Brewster and other Capitol Hill spokesmen is that the Navy is obtaining its land-based bombers "only by suffrage of the Army." This position Washington observers believe is shared by men in the Army Air Forces who are powerless to do anything about the Navy's raids on its planes. Originally all land-based bombers were on order for the Air Forces, then subsequently the policy of allocating planes at the finishing point between the services, despite which service placed the order, was established. As a result, many land-based planes urgently needed by the Air Forces and on long-term Army orders were diverted to the Navy. Recently the Navy has been acquiring its own facilities for land-based planes.

"After Pearl Harbor, the Navy realized that unless land-based bombers were acquired the Army would take over control of the sea as well as the land," Brewster reports. The Navy's patrol planes could not be used even for patrol in zones where there was a likelihood of their being forced into combat action.

## Turned Down

Brewster, in a minority report in 1938, urged the Navy to investigate the possibilities of land-based aircraft tactics but was turned down by admirals who contended that such craft had no place in a fleet, and asked Congress instead to authorize three additional super battleships to cost between \$75,000,000 and \$100,000,000 each. Construction of these ships was abandoned last summer and the Navy embarked on a land-based aviation program for the first time.

Probably millions of dollars had been spent on work preliminary to the construction of two of these dreadnoughts, the *Maine* and the *New Hampshire*, when the Navy decided to cancel construction, Brewster reports.

He adds that "there is talk currently brewing at the Navy to go ahead with construction of aircraft carrier versions of these ships."

Even some of the battleships authorized previous to 1938 and scheduled for completion in 1943 are not being put to very good usage, Brewster says, specifying that according to his last information the *Kentucky* was being used for storage purposes at Norfolk.

## Rolls Royce Described

British Information Service has issued a seven-page description of the new Rolls Royce Merlin XX single stage supercharger-equipped aircraft engine and the Merlin 61; with a two-stage supercharger and intercooler. Copies are available from the BIS, located at 1317 F St., N.W., Washington, D. C.

## Wright Field's Contract Methods Under Scrutiny

Col. William O'Dwyer, native of Kings County, N. Y., president of Fiorello LaGuardia, last mayor election, and Tom Clark, chief of the War Resources Unit of the Department of War, are directing an investigation of alleged malpractices at Wright Field, Army Air Forces procurement center, it is disclosed.

The investigation, reportedly "not only civilian affairs but which might involve men of the Army," has been underway for two months. A Justice Department announcement of the grand jury's verdict, based on the findings of the investigation, is expected late in December.

O'Dwyer, 53, gave up his year as District Attorney on June 1, 1942 to accept a major's commission in Army intelligence; in his former post he won national attention by breaking up Brooklyn's Murder, Inc., syndicate. Conviction of three thugs last 30 was the climax of O'Dwyer's investigation which resulted in 83 killings.

## Focke Wulf Tested

The Focke-Wulf 190 "is out of the race," the British Information Services report in a special released in Washington. "Admirably it is a fine fighter plane, the RAF is now in possession of its secrets and they know that not as good as the new Spitfire."

BIS state that following completion in England of a complete 190, the RAF has been testing the ship alongside British aircraft. It has been found that its speed increases considerably when it is above 20,000 ft., while its effective height is around 18,000 ft. In contrast, the new Spitfire, its Rolls Royce Merlin 61, gives performance up to nearly 10,000 ft.



# Wilson, Wright Express Optimism Over 1943 Plane Production Program

By MARY PAULINE PERRY

CHARLES E. WILSON and Donald Nelson, top civilian leaders of the aircraft production program, in separate interviews at Washington, express optimism on the 1943 outlook for meeting the 1943 production goal set up by the High Command and President Roosevelt.

Mr. Wilson said the directive was issued to WPB by the President and acknowledged that the trend of the coming year will be to increase the production of bombers and other heavy aircraft. The industry will "take two or three as heavy a load as far as output is concerned" in 1943, he said.

Mr. Wright said the directive was issued to WPB by the President and acknowledged that the trend of the coming year will be to increase the production of bombers and other heavy aircraft. The industry will "take two or three as heavy a load as far as output is concerned" in 1943, he said.

Re-balancing of the war program with cancellation of many orders and temporary shutdowns in some areas has been confirmed in an official WPB, Army and Navy release stating: "Great importance in the strategic plans for this year is placed on aircraft . . . The program has been adjusted as a means of insuring the production of these items far above the rate achieved last year. It provides, for instance, about twice the number and four times the weight of planes built in 1942, with emphasis continued on bombers designed to carry the maximum destruction to the enemy fighting forces and industrial centers."

The release further states: "The majority of plant facilities originally planned for the production of curtailed items can be converted to production of items for the Air Forces, for the Navy, or for the Maritime Commission. Some of these conversions are already in the process. One plant, for example, built to make recoil mechanisms for cannons, has been changed over to produce struts for aircraft landing gears.

"It is not possible in every instance to effect such a clean shift, but every possible care will be taken to make existing facilities do the job rather than build new ones. The total number of plants involved in such changes will not be known until later."



THE WAR-OF-NERVES EXPERT  
Herblock for NEA Service.

## Army Confirms Higgins Contract

A contract for construction of a "large number of cargo carrying airplanes" was recently made between the Army Air Forces Materiel Center at Wright Field, Dayton, Ohio, and Andrew J. Higgins of New Orleans, La., according to War Dept. announcement.

Contract was on a cost-plus-fixed-fee basis, and total outlay is expected to involve "more than \$5,000,000." Planes "will be built largely of non-strategic materials but capacity and expected performance were not disclosed."

## Mack Relinquishes Plant for Torpedo Bomber Production

Production of a "large number" of torpedo bombers for the Navy has been made possible by Mack-International Truck Corp., Long Island City, N. Y., which has relinquished a factory in Pennsylvania to Vultee Aircraft, Inc., Vultee Field, Cal., for conversion to aircraft production, according to WPB announcement.

"We shall save at least six months in the production of (these) bombers," Charles E. Wilson, Production Vice Chairman of WPB, said in a letter to C. T. Ruhf, vice president and general manager of Mack-International.

Arrangements for the use of this plant were made by the Facilities Division of the Office of Production Vice-Chairman WPB, in collaboration with officers of the Bureau of Aeronautics of the Navy Dept. and the Motor Transport Division of Army Ordnance.

Wright's major recommendations to the aircraft industry could feel more secure. However, Wright, who is highly regarded in engineering circles as an engineer is, not as highly regarded as an administrator. In Washington he is considered to have been pro-Army during the recent WPB-Army, Navy battle for production control.



Washington Times-Herald.



**Lees to DSC:** Coming to Washington in 1934 after eight years in commercial aviation, Robert E. Lees has played an important part in governmental aviation activities, starting with the NRA where he handled the codes for air transport, commercial aviation, and other transport activities, then with WPA as assistant director of airports, and later as chief of the aeronautical section of the U. S. Maritime Commission. When OPM was formed in 1940 he was asked to join the aircraft section and in the subsequent formation of WPB he became chief of the aircraft priorities branch until Dec. 1 when he joined the Defense Supplies Corporation as assistant to Reed Chambers, DSC vice president.

### Nuckols Succeeds Ennis in AAF Public Relations Position

Colonel Arthur I. Ennis, formerly AAF Public Relations Officer and recently Assistant to the Public Relations Director for the Army Air Forces, has completed his tour of duty in the capital and received a field assignment.

Shortly after Christmas Col. Ennis left for Tampa, Fla., where he reports to Maj. Gen. St. Clair Street, Commanding General of the Third Air Force.

Although there has been no official confirmation, unofficial reports indicate the colonel will be assistant chief of staff at his new post.

Replacing Col. Ennis is Col. William P. Nuckols, a U. S. Army Reserve officer who has been public relations officer at Randolph Field since 1938.

When Col. Ennis organized the AAF Public Relations section he was also on the General Staff in the pictorial branch. Gradually he was relieved of General Staff duty and was able to devote his time and energy to the AAF. Col. Ennis entered the Army as a cadet in the last war and is now a command pilot. Although he has no direct public relations training he has been assigned to that field numerous times. At one time he was a radio public relations officer in the Hawaiian Islands.

### Popular Names of Military Planes

(In a joint announcement issued Jan. 4, the Army and the Navy revealed that they have officially recognized the popular names which have become associated with the various military aircraft. The complete list follows):

HEAVY BOMBERS			
Army	Navy & Marine Corps	Name	Original Manufacturer
B-17		Flying Fortress	Boeing
B-24	PBY	Liberator	Consolidated
MEDIUM BOMBERS			
B-18		Bolo	Douglas
B-23		Dragon	Douglas
B-25	PBY	Mitchell	North American
B-26		Marauder	Martin
B-34	PV	Ventura	Vega
LIGHT BOMBERS			
A-20	BD	Havoc (Attack)	Douglas
A-24	SBD	Dauntless (Dive)	Douglas
A-25	SB2C	Helldiver (Dive)	Curtiss
A-29	PBO	Hudson (Patrol)	Lockheed
A-34	SB2A	Buccaneer (Dive)	Brewster
A-35		Vengeance (Dive)	Vultee
	SB2U	Vindicator (Dive)	Vought-Sikorsky
	TBD	Devastator (Torpedo)	Douglas
	TBF	Avenger (Torpedo)	Grumman
PATROL BOMBERS (FLYING BOATS)			
OA-10	PBY	Catalina	Consolidated
	PBY2	Coronado	Consolidated
	PBM	Mariner	Martin
FIGHTERS			
P-38		Lightning	Lockheed
P-39		Airacobra	Bell
P-40		Warhawk	Curtiss
P-43		Lancer	Republic
P-47		Thunderbolt	Republic
P-31	F2A	Mustang	North American
	F4F	Buffalo	Brewster
	F4U	Wildcat	Grumman
		Corsair	Vought-Sikorsky
SCOUTING/OBSERVATION (SEAPLANES)			
SO3C		Seagull	Curtiss
OS2U		Kingfisher	Vought-Sikorsky
TRANSPORTS			
C-43	GB	Traveler	Beech
C-45A	JRB	Voyager	Beech
C-46	R5C	Commando	Curtiss
C-47		Skytrain	Douglas
C-53	R4D	Skytrooper	Douglas
C-54	R5D	Skymaster	Douglas
C-56	R50	Lodestar	Lockheed
C-61	GK	Forwarder	Fairchild
C-69		Constellation	Lockheed
C-76		Caravan	Curtiss
C-87		Liberator Express	Consolidated
PT-13 & 17	JR2S	Excalibur	Vought-Sikorsky
PT-19 & 23	N2S1 & 3	Caydet	Boeing
	N2T	Cornell	Fairchild
PT-22	NR	Tutor	Timm
BT-13 & 15	SNV	Recruit	Ryan
AT-6	SNJ	Valiant	Vultee
	SNC	Texan	North American
AT-7	SNE2	Falcon	Curtiss
AT-8 & 17		Navigator	Beech
AT-10		Bobcat	Cessna
AT-11	SNB1	Wichita	Beech
AT-13 & 14		Kansas	Beech
AT-15		Yankee-Doodle	Fairchild
AT-19		Crewmaker	Boeing
		Reliant	Vultee
LIAISON			
L-1		Vigilant	Vultee
L-2		Taylorcraft	Taylorcraft
L-3-C		Grasshopper	Aeronca
L-4-B	ME	Aeronca	Piper
L-5		Grasshopper	Piper
		Piper	Vultee

### Ryan Gets New Navy Plane Order

The Navy has placed an assignment for the "design of a new and highly important combatant plane" with Ryan Aeronautical Co., San Diego, Cal., according to company announcement.

"A tapering off of production on the Ryan SOR-1 Navy Scout observation type was given as one of the results of changes which are being made in Ryan's production program due to shifting tactical needs in the combat areas.

During this change-over period, Ryan proposes to make "major aircraft components for important military aircraft for several prime contractors." A steady increase in the

### John Parker Heads Transport Glider Firm

John E. Parker of Washington, D. C., has been named president of the Northwestern Aeronautical Corp., Minneapolis, Minn., according to announcement by Northwest Airlines, Inc., of which Parker is a director.

Northwestern is making transport gliders for the U. S. AAF. Parker was one of its organizers, and had been chairman of the board of directors before attaining his present position.

number of workers and further expansion of manufacturing buildings and facilities is forecast by company officials.

### Army-Navy Decorations

#### British Air Force Cross

Lieut. Col. James T. Conn, AAF, Waco, Texas, awarded this by Air Marshal D. C. S. Eville, in the RAF delegation in Washington, his services in instructing RAY in the flying and maintenance of first Boeing Flying Fortress to the RAF.

#### Letter of Commendation (Mid-Pacific)

For his part in service aboard U.S.S. Yorktown during the Battle of Midway, Commander Oscar F. Smith, U.S.N. Norfolk, Va., was commended by Secretary of the Navy Frank Knox. Letter said, in part: ". . . for meritorious service rendered by you to the enemy as Air Group Commander and Flight Director . . . your organization and planning . . . the skill and courage shown . . .

#### Medal of Honor (Southwest Pacific)

This award was conferred posthumously on Captain Karl Pease, U. S. AAF, "for conspicuous gallantry and intrepidity above and beyond the call of duty in action with the enemy near Rabaul, New Britain, on June 6-7, 1942." Captain Pease was the Distinguished Flying Cross in 1942 for his part in helping to evacuate personnel from occupied territory.

#### DSM (China)

Brig. Gen. Claire L. Chennault, commander of the China Air Task Force, for "protecting a large portion of occupied China from hostile attack and in inflicting severe upon the enemy . . ."

#### (Special Assignment)

Col. Donald N. Yates, USA, Barksdale Field, La., "in a position of great responsibility as special mission representative of the United States Army Air Forces to a government . . ."

#### Silver Star (Southwest Pacific)

Captain Hubert I. Egea, City, Iowa; Lt. Harold C. McLean, San Diego, Cal.; Lt. Edward Watts, Compton, Cal.; Lt. Roy Williams, Sterling City, Texas; Lt. Albert J. Hobday, Cincinnati, Ohio; Horace E. Perry, Beverly Hills, Calif.; Sgt. John C. Haddow, Publicity; Sgt. William Prince, Phoenix, Ariz.; Sgt. Lawton L. Tabor, Salt Lake City, Utah; Sgt. William G. Wells, Ill.; Sgt. Howard A. Tanner, New Philadelphia, Pa.; Sgt. Ray L. Draper, Washington, D. C.; Sgt. James M. Keeler, Oakmont, Pa.; Sgt. Raymond E. Johnson, Chicago, Ill.; Cpl. Russell F. Berrill, Hartford, Conn.; Cpl. Herman Tripplett, Keyser, W. Va.; Pvt. John A. Barker, Pueblo, Colo.; Pvt. John N. Budde, St. Louis, Mo., and Pvt. John Class Frank Parisi, Astoria, L. I., all of the U. S. AAF.

#### Gold Star

#### (Southwest Pacific)

Lt. William F. Christie, USA, Deerfield, Ill.

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## Horsepower for Horsepower

They are equals — the massive steam powerplant and the aircraft engine... each developing 2000 horsepower. But air power depends on such compact, light-weight units as the Cyclone. Engineering development at Wright, based on unequalled experience, is now providing for the tonnage transport of the future.

**WRIGHT** *Aircraft Engines*

POWER THE TONNAGE OF THE AIR



#### It's Self-locking

The Boots principle of self-locking nut as employed in the Bellows, Wing, and Rol-Top (illustrated above) styles is well-known throughout the aircraft industry. In each case the nut is one-piece, all-metal. The self-locking action is obtained by means of the out-of-phase locking collar connected to the lead threads by means of a resilient spring member.

Here are a few of the planes fabricated with Boots Nuts:

Grunman Wildcat F4F-3  
 Boeing Flying Fortress B-17E  
 North American B-25  
 Curtiss Commando C-46  
 Consolidated Liberator B-24E  
 Curtiss P-40  
 Curtiss Dive Bomber SB2C-1  
 Brewster Buccaneer  
 Edo Floats  
 All Plywood Planes

## BOOTS FOR THE PLANES OF CHINA

On the landing fields of China, even the coolie boy pitches in to help the maintenance men . . . and so he, too, knows about Boots for the planes of China.

If you could ask the men who repair the planes or the pilots who fly them, not only in China but wherever American fighter planes fly, you'd find out *why* Boots Nuts have earned such an enviable reputation. You'd learn that they are generally lighter in weight, have greater re-usability in maintenance and are proof against any airplane vibration. They literally "outlast the plane." There is lasting economy in the use of Boots Aircraft Nuts. And, of course, they meet the exacting specifications of all Government agencies.

For the engine manufacturer, Boots "Rol-Top" Nuts excel in performance under higher temperatures.

# BOOTS

*Self-Locking Nuts For Application In All Industries*

BOOTS AIRCRAFT NUT CORPORATION ★ GENERAL OFFICES, NEW CANAAN, CONNECTICUT

# Constellation Readied for War Work

(Continued from page 15)

or wheels, brakes and retracting mechanism up to the attachment to the main structure.

## Fuselage

The unique appearance of the Constellation fuselage is the result of several considerations of design. In the first place, it was desired to obtain a fuselage shape such that the lift distribution over the wing should be only slightly affected by the presence of the fuselage. This was partially obtained by the design of the Constellation fuselage which resembles an airfoil in some respects.

Since the cabin of the Constellation is pressurized, it was advisable to use circular cross-sections throughout the length of the fuselage. The use of circular sections, however, tends to impose difficulties upon the design of the fuselage if the optimum width of floor space is required in order to accommodate the greatest possible number of passengers. Cambering the fuselage center lines tends to give an optimum seat arrangement which is of value in providing seat space and berth width, particularly in the nose and tail sections.

A further advantage incidental to the cambered fuselage is the material saving of the nose wheel strut, saving several hundred pounds of landing gear weight.

## Interior

The flight station is located in the forward upper portion of the fuselage. The pilot's seat is located on the left, co-pilot on the right. Flight engineer is behind the co-pilot, facing outward. The radio operator sits behind the pilot, facing forward.

Aft of the flight station and separated therefrom by a bulkhead and curtain are provided a navigator's station and accommodations for the crew. Aft of the navigator's station and crew's quarters and separated therefrom by a bulkhead and door, space is provided for cargo on the right side and communications equipment on the left side.

The main passenger compartment is located aft of the cargo spaces and is separated therefrom by a bulkhead and slide door. Arrangement of this compartment varies according to the use that is made of each individual airplane and depends on the number of passengers to be carried, weight of cargo load, non-stop range desired and whether the plane is to be used at normal cruising speeds or wide open to dash troops or equipment at full throttle to some outpost where a sudden emergency arises.

For example, the Constellation is designed to carry 55 passengers and a crew of nine from Los Angeles to New York in record time.

In one arrangement of the passenger compartment seats could possibly provide for 60 passengers as follows: on left side of an aisle, four folding four-place benches; on right side, 11 rows of four seats each, facing alternately forward and aft. The seats on right are convertible in flight to provide berths for 22 passengers.

Food lockers are installed at after end of the main passenger compartment. There are eight windows, four on each side of the cabin, in the prototype airplane, although number of windows varies according to the seating arrangements of the various models soon to be in production.

Aft of the passenger cabin and separated therefrom by a curtain are lavatory facilities.

Passenger entrance is located on the left side near the after end of the main cabin. Entrance for crew is in flight station on the right side. Additional cargo space is provided beneath the floor.

## Tail

One of the considerations in the design of the triple tail is to keep the over-all height at a minimum. The static height of the Constellation is 18 feet 8 inches, as compared with 20 feet 9 inches for the 307-B and 27 feet 10 inches for the DC-4. A low airplane fits more easily into a hangar. There are other



certain aerodynamic features which prompted Lockheed, famous for its twin-tailed aircraft, to add a third fin. These are of great importance in the present design.

For instance, particular attention has been paid to the possibility of failure of engines during takeoff or cruising flight. The arrangement of the Constellation tail surface gives a maximum amount of control and safety for a given pilot effort in the emergency conditions of engine failure.

The arrangement of the vertical surfaces also tends to increase the effectiveness of the horizontal tail surface which is the major control surface of any airplane. The outboard vertical surfaces eliminate the tendency of air to spill off the end of the horizontal surface, and thereby, increase the effectiveness of the horizontal plane. The air, by these means, is harnessed, controlled and made to do the work that is required of it when the elevator is deflected.

## Hot Wing De-icer

"Although the first Constellation may not have the hot wing de-icer, the later ones will. The first United States airplane that ever had hot wing de-icing was a specially equipped Lockheed Model 12. As a result of tests made by the NACA in this Model 12 airplane, the use of the exhaust heat for de-icing of wings, rather than the rubber type boot over the wing leading edge, has come into prominence for all modern aircraft. Many airplanes are now being

converted to this type of de-icing equipment. The later models of the Constellation will incorporate this type of de-icing."

Lockheed gives particular credit to Hall Hibbard, its vice president-chief engineer, and C. L. "Kelly" Johnson, chief research engineer, for their work in connection with the plane.



**Little Brother:** From this P-38 the Lockheed Constellation inherited its speed, range and load-carrying ability. Aerodynamically, the Constellation's is an enlargement of the P-38's.

## Army-Navy Bulletins

**Pre-Flight School:** Another Navy pre-flight school will open at Del Monte, Cal., about Feb. 4, according to the Navy Dept. It will be housed at the Hotel Del Monte, and will accommodate about 1,500 students. Commanding Officer will be Captain George W. Steele, U. S. N. (retired). As with the other four pre-flight schools, the course will last about three months.

**Flight Schools:** Navy Dept. has announced it has made contracts with 20 colleges for ground training of aviation cadets. They will be called Naval Flight Preparatory Schools. Two hundred cadets were scheduled to report to each school about Jan. 7. Each college is to supply about 28 full-time instructors under the supervision of an officer in charge who will handle discipline and administration. The colleges are: Williams College; Wesleyan University; Rensselaer Polytechnic Institute; Colgate University; University of Pennsylvania; University of Virginia; University of South Carolina; Murray State Teachers College; University of Texas; Louisiana State Normal School; Ohio Wesleyan University; College of Wooster; Depauw University; Cornell College; William Jewell College; Monmouth College; St. Olaf College; University of Southern California; California Polytechnic School, and the University of Washington.

**New Medal Design:** War Dept. has announced award of \$1,500 for a winning design for the new Air Medal to Private Walter Hancock, in private life a professional artist. New medal is a pendant from the Air Corps ribbon of blue and gold, and is a fleur-de-lis, symbol of North, which surmounts a 16 pointed compass rose. It will not be available for several months to those to whom it has been awarded.

**New Air Station:** Approval of a site at Hitchcock, Texas, near Galveston, for a new Naval Air Station for lighter-than-air purposes, to cost about \$10,000,000, has been announced by the Navy Dept.

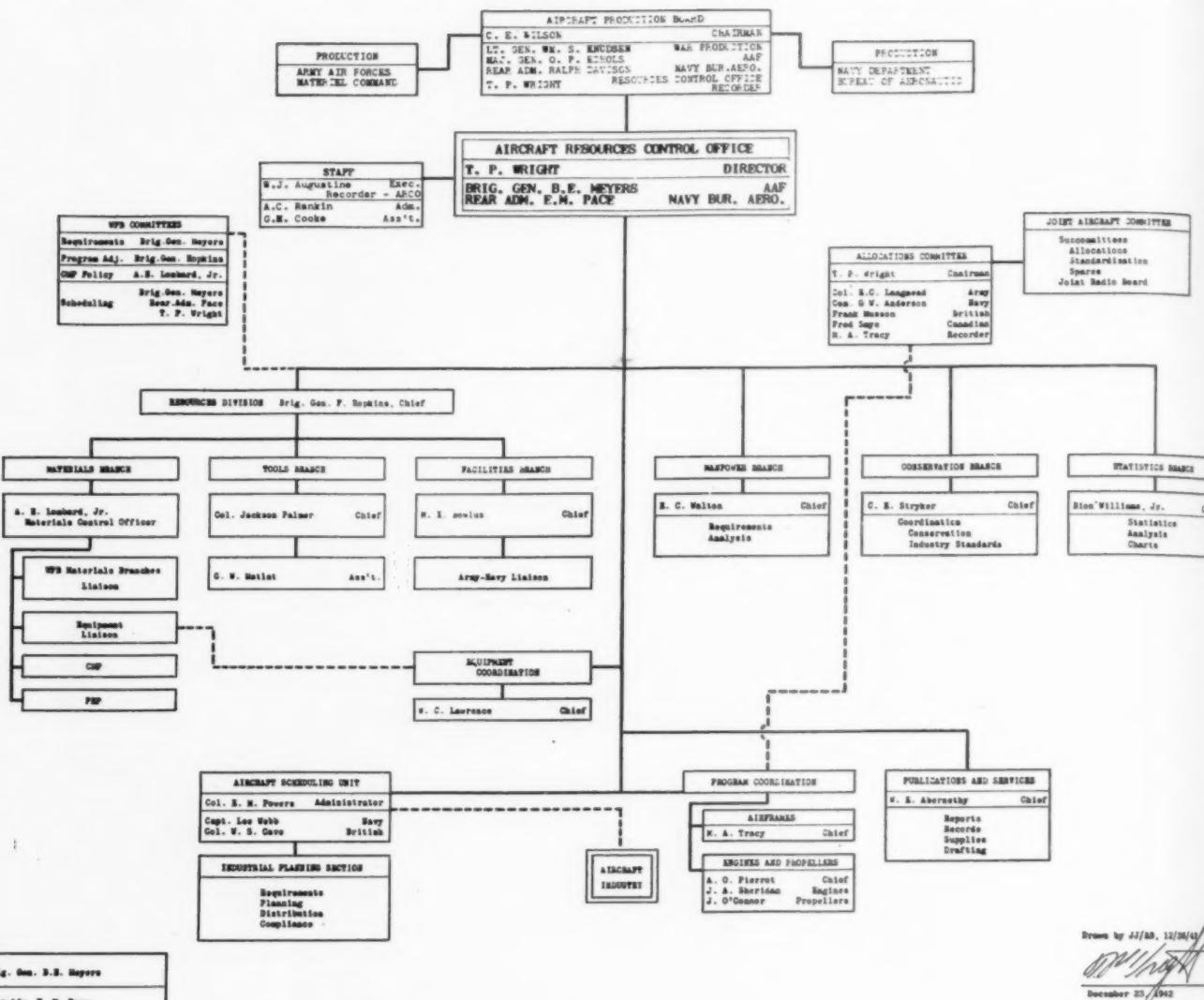
**WAAC's to AAF:** AAF is now requesting WAAC's to replace enlisted men needed for combat duty, in specialized jobs, War Dept. has announced. WAAC's will be trained in such various specialties as parachute rigging, bombsight repairing, weather observing and glider instruction.

**Photographic Units:** A Combat Photographic Section has been established to train Combat Photographic Units which will supplement present Navy and civilian photographic coverage of combat operations, according to the Navy Dept. Ten officers are being trained for supervisory duties. Units will consist of three enlisted men, two motion picture cameramen and one still photographer. Films and pictures "compatible with security" will be released to the public.

**WAVE Specialists:** WAVES between the ages of 20-35 will be assigned specialist jobs as Link Trainer operators, line assistants doing groundwork at air stations, control tower watchers, aviation mechanics, aviation metal-smiths, photographers, parachute riggers and aerographers' mates.

**Navy Stays:** After "detailed consideration," it has been decided that a portion of the Navy Dept. will not move to War's Pentagon building, as was planned, according to Navy announcement. Limitations of space were said to have made the move impracticable.

# Wright Issues First Chart Of New Aircraft Committee



## APPROVED:

AAF	Brig. Gen. B. E. Meyers
Navy	Rear Adm. E. M. Pace

Wholesale resignations from the former WPB Aircraft Production Division have delayed an official permanent organization chart of ARCO (Aircraft Resources Control Office) which functions directly under the new Aircraft Production Board, top agency for all aviation production in the country. T. P. Wright, ARCO Director, however, signed a tentative chart on Dec. 23, 1942 which has been approved by AAF and the Navy's Bureau of Aeronautics. The chart gives some indication of the important role being played by Army men.

As AMERICAN AVIATION went to press, personnel in both the old WPB Division (not yet dissolved) and ARCO were uncertain as to their exact jobs in the aircraft production picture. Resignation in December of Harold E. Talbott, former Director of the Division, leaves Wright as nominal head of the Division of which he was Deputy Director, as well as Director of ARCO. Talbott tendered his resignation and returned to private industry shortly

after it became public that he was not included as a member of either the Aircraft Production Board headed by C. E. Wilson or ARCO.

In the past month the following resignations have piled up: H. R. Boyer, formerly chief of the manufacturing branch has left Washington; Joseph Salzman, formerly field man for engines and well known aviator, is doing experimental work for General Motors; William Ed Vogelback, field man for struts, has returned to his own business.

Richard E. Palmer, expeditor for twin-engine bombers, boats and for propellers, is now with Bell Aircraft; Thomas Carroll, former assistant to the deputy director, is serving as an advisor to a group of North Carolina furniture manufacturers now making plywood; S. Miller Mack, who was special assistant to the materials branch, has left; Harry Agerter, formerly principal industrial specialist, is general manager of Aircraft Components, Inc., of Wichita, Kan.; Norman Deuble, who was chief of ferrous metals section, has transferred to the WPB Iron and

Steel branch; Christian Heide, who was field man for tools, instruments and automatic pilots, has resigned; Robert E. Lees, former priorities branch chief, goes to Reconstruction Finance Corp.; Russell Hardy, formerly glider field man, has resigned; Thomas Butts, program analysis section chief, may join Lend-Lease Administration.

Following the Christmas holidays, when the chart reproduced on this page was photostated and distributed, Dr. A. E. Lombard, Jr., slated for two important jobs as materials control officer of the Materials Branch and CMP Policy Committee head, handed in his resignation forcing Mr. Wright and the members of his ARCO to find some one else equipped to fill the job. William C. Lawrence, shown on the chart as equipment coordination chief, also decided to leave the Washington set-up.

Significant is the fact that the Materiel Command refused to approve Mr. Wright's chart until he agreed to place Brig. Gen. Fred Hopkins, an assistant chief of staff of

the Materiel Command, as Chief of the Resources Division. The Resources Division heads the work branches, giving materials control to the Army, something Wright was not prepared to accept until he became enmeshed in the difficulties leading up to approval of his chart by AAF and Bureau of Aeronautics.

The Aircraft Production Board announced jointly by WPB, Army and Navy, has C. E. Wilson, Vice chairman for production, chairman; and as members Lt. Gen. William S. Knudsen, in charge of War Department Production; Maj. Gen. O. P. Echols, Commanding General AAF Materiel Command; Rear Admiral Ralph Davison, assistant chief of the Navy Bureau of Aeronautics; and T. P. Wright, Resources Control Office. Working with the Board and acting as a program agency is ARCO, with T. P. Wright as Director, and members Brig. Gen. B. E. Meyers, chief of staff of AAF Materiel Command, and Rear Admiral E. M. Pace, Jr., Director of Materials, Navy Bureau of Aeronautics.

Drawn by JJ/AB, 12/30/42  
December 30, 1942  
Director - Office of Resources

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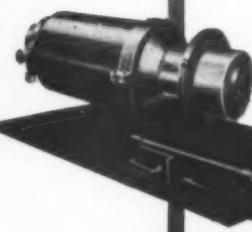
# Quick Starting



## BREEZE CARTRIDGE-TYPE ENGINE STARTERS ... Quick Action Under All Conditions

For dependable starting under all conditions, many of America's fighting aircraft rely on Breeze Cartridge-Type Engine Starters. Designed for use on aircraft engines ranging from 300 to 2,000 horsepower, this starter saves vitally important seconds in getting the aircraft off the ground. A touch of the switch sets the starter into action—slow-burning fuel provides a steady torque to turn the engine over at the rate of 180 RPM. In action today on many battlefronts, the Cartridge-Type Engine Starter is but one of the many well-known Breeze aircraft accessories that are serving the United Nations in this war against aggression.

Manufactured under Coffman patents



**BREEZE CORPORATIONS, INC.**  
Newark, New Jersey

**Britain Producing  
New Transport?**

Disclosure that Great Britain is producing a new plane, the York, was recently made in the House of Commons by Robert Perkins, Conservative M. P. In discussing the outlook for civil aviation, Perkins compared the York with the Sunderland, and it has been assumed the York is a large plane which will transport both passengers and freight, although it is still on the secret list.

Perkins was quoted as saying that "if Air Control would release 20 Yorks and 10 Sunderlands we could look Pan American Airways in the face."

**Gustavson, Neff  
Join Navy Press**

The Navy Department continues to build up a staff of carefully selected aviation writers gathered from the aircraft and air transport industries, under the guidance of Assistant Secretary for Air, Artemus Gates.

Latest men to join the staff are Lieut. Walter H. Neff, formerly assistant public relations director of Pan American Airways, earlier with United Air Lines, and more recently on public relations assignment with the Air Transport Association, and Lieut. Philip Gustavson, who comes from the public relations offices of Wright Aeronautical Corp.

Lieut. Benson T. Hoy, former editor of *Western Flying*, who has been acting as liaison officer between the Bureau of Aeronautics and Bureau of Public Relations, has been reassigned to active flying duty with a Naval Air Transport squadron.

Already announced as having joined the group, which has not been given an identifying designation, are Lieut. Robert A. Winston, heading the office as Aviation Assistant to the Director of Public Relations, and Lieut. Leon W. Shloss, formerly with the Aeronautical Chamber of Commerce, and earlier with International News Service in Washington.

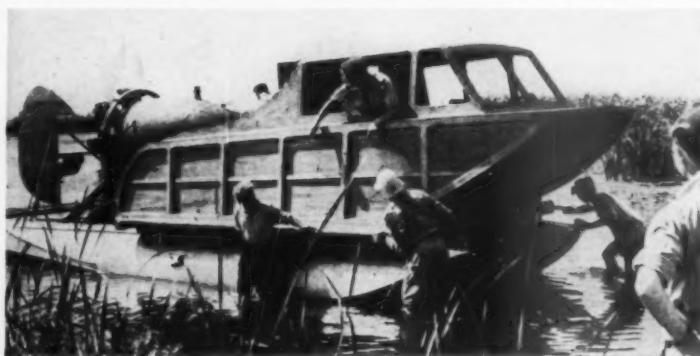
Winston is the author of three non-fiction books, "Dive Bomber," "Aces Wild," and "Aircraft Carrier." He is a Naval flyer and after completing a four-year tour of duty in the Naval Reserve became a test pilot for Brewster Aeronautical Corp. He returned to active duty in December 1940, and was named to his present position Nov. 11, 1942.

**Buys Luscombe School**

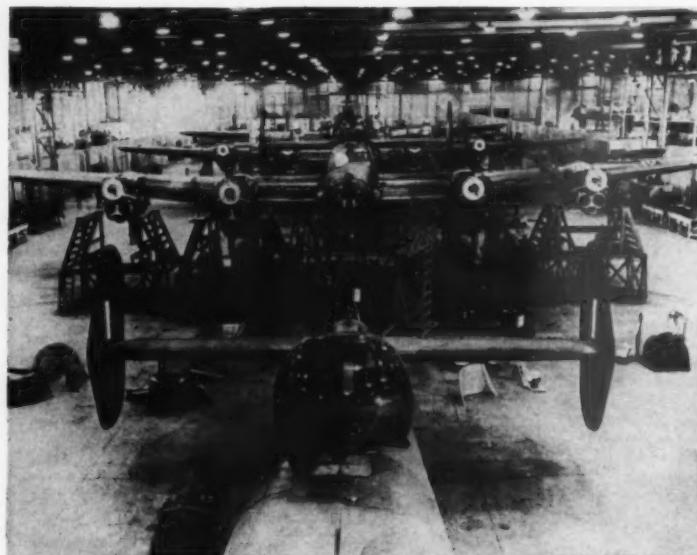
Organization of the Atlantic Aviation Institute, Inc., Trenton, N. J. has been announced. Consisting of a local group, the new company has taken over the Luscombe School of Aeronautics in Trenton. Allan Whitlock is school director. Government approved courses in airplane and engine mechanics will continue to be offered, as well as shorter specialized courses.

**New British Photos**

**The "Seafire":** The British Navy's new fighter plane, the Seafire, is a Spitfire modified for the special conditions of working from an aircraft carrier. The new plane has already proved its worth in North African operations, the British say. Large numbers of them, operating from carriers, provided fighter protection for the convoys and escorting warships before the Allied occupation of the airfields.



**RAF Rescue Service:** This interesting photo shows a hydroplane which is operated by the RAF rescue service in the Middle East. It operates on the lakes of the Nile Delta for the assistance of pilots forced down on the water. Consisting of a cabin mounted on seaplane floats, it is driven by an aircraft engine and propeller mounted in the stern, and is steered by an aircraft rudder. Top speed of the craft is about 15 knots.



**British Production:** Shown above are assembly lines in a British aircraft factory producing Handley Page "Halifax" bombers.

Photos by British Press Service.

**New Aerosphere  
Says Plane Gun  
May Reach 75 M.**

"Very probably the fighting of the future will be a clever sign of a more or less unique craft with interchangeable weapons," the 1942 issue of *Aerosphere*, issued in 1156 pages, reports in its introduction which includes a statement by Lieut. Gen. H. H. Arnold, AAF chief.

"Either a number of machine guns, cannon, or bombs will be carried, and with easily replaceable armor plating, so that for various combat missions the plane may be heavily protected, or temporarily dispense with the protective plating."

"The steel men are manufacturing better armor plate, against which only guns of high caliber can be pitted, calibers which can run as high as 75mm, or 3 inches before the war is over," it is stated.

Gen. Arnold's statement: "Air power is the key to victory in the war which is now waging every continent. The war is everywhere because the air is everywhere. There is no doubt that the past year has been, mainly in aviation, the most important and momentous since man first flew."

"The long range bomber has changed the whole scheme of warfare . . . The concept of airpower is growing by leaps and bounds and already we have learned that it is an essential ingredient of both sea and land power. Because of air power, Naval strategy is being sharply revised. We are constantly encountering new and ever more powerful military uses for air power."

Besides comments on air power contributed by other high Army and Navy officials, *Aerosphere* contains latest statistics on the world's aircraft, a buyer's guide, a special section on aircraft engine descriptions, and data on altitude records, races, government bureaus, and general aeronautical information.

**Navy Starts 20  
New Schools**

Establishment of 20 new flight preparatory schools, which were scheduled to begin operations Jan. 7, has been announced by the Navy Dept. In these schools, naval aviation cadets will receive a three months' ground training course before entering the pre-flight schools.

Four thousand cadets on the waiting list started at the 20 colleges participating in the program Jan. 7. Four weeks from that date, 4,000 more are scheduled to begin, followed by another group of 4,000 at the end of another month. Navy hopes to turn out "approximately 12,000 cadets every three months ready for further training . . ."

In this preliminary schooling, cadets will study mathematics, physics, communications, plane recognition, aircraft engines, navigation and geography.



—Here they come—  
the **CURTISS-COMMANDOS!**



**SECOND PRINTING:** Send 10¢ for your copy of this fascinating 96-page history of aviation by Aisan Jordanoff, author of "Your Wings", with illustrations of current fighting types. Airplane Division, Dept. M, Curtiss-Wright Corporation, Buffalo, N. Y.

"Swarming down from the skies, Allied gliders and parachute troops captured enemy airfields . . ." More and more in the day's news, words such as these reveal the vital part that transport and cargo planes are playing in the swift invasion of enemy-held areas.

The Curtiss-Commando, the world's largest twin-engined transport, has a leading role in this new and revolutionary phase of the war. These giants of the air telescope weeks into hours and perform prodigies in swift movements of men and matériel.

**CURTISS-WRIGHT**  
Corporation  
AIRPLANE DIVISION



1920·Curtiss Eagle, first inter-city "liner," 400 h.p., 10 passengers, 105 m.p.h.—64' wing span.



1928·Curtiss B-2 Condor Bomber for the U. S. Army. Greatest weight carrying airplane of its time. Heavy defensive armament. Two Curtiss Conqueror engines.



1929·Curtiss Condor, 2 pilots and 18 passengers, 139 m.p.h. high speed, two 600 h.p. Curtiss Conqueror engines.



1930·Curtiss Condor, the first sleeper plane—6 compartments, each with 2 berths, two 720 h.p. Wright Cyclone engines, 167 m.p.h. cruising.



*Airacobras Being Prepared for Combat*

## MEET Joe Brown, A. M.

Expertly concealed from view, this distant Allied Air Base is on the alert for enemy bombers. With orderly dispatch the ground crew readies an Airacobra for its vital performance in action.

What qualifies these men to so guard the lives of pilots? Meet Joe Brown... Aviation Mechanic of the ground crew.

Joe signed up after having a little mechanical experience. Because he was alert and willing to learn the Army sent him to our training school after preliminary aircraft training.

Here, like thousands of other boys who have also attended our school, Joe learned almost everything there is to know about a P-39 Army Airacobra from design and construction to the most minute detailed service

operations. His training under Bell technicians was part of a carefully developed program which is making a solid contribution to America's success in sky combat.

Now on a distant front, his is an assignment of which any man might well be proud. None is of greater importance. Mastery of the air depends not only upon planes and pilots but also upon the thoroughness and competence with which the planes are serviced by the ground crew.

We have not forgotten Joe and his fellow Army A.M.s. Many of our own highly-trained men are working with



them on distant fronts, solving problems of service that no laboratory tests can answer.

In this way, we are learning many vital things about improving aircraft for a world at war. And we also are learning many things that will be of tremendous benefit in building still better planes for a world at peace. © Bell Aircraft Corporation, Buffalo, New York.

*Airacobras for victory —*  
FUTURE PLANES FOR PEACE

**BELL** Aircraft

PACEMAKER OF AVIATION PROGRESS

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## War Agencies Review

**WAR MANPOWER COMMISSION**, since the President's Executive Order appointing Paul V. McNutt as Administrator, has become increasingly active. Several of the proposals that had been talked about previously, but not acted upon, are being shaped up for nation-wide deployment, either through directives authorized by an Executive Order through legislation.

One plan of prime interest to the Industry and that is well under way is the establishment of a force of "labor utilization analysts." A few "try-out" men have been selected, notably Detroit, and a labor inspector or "utilization analyst" installed. Two hundred such inspectors were proposed, of them seniors at \$4,600 and 100 at \$3,800. Their duties have been described as: inspections of plants to determine the manner in which they are utilizing labor, whether effectively or otherwise; whether machinery is being used with a minimum of labor; and a checkup to see that no more men are employed than needed. In addition, they are to see that plants have a training program in operation. "One of the biggest labor problems in this country is in connection with the productivity of the individual in the plant," a WMC spokesman said, "and to increase the productivity of workers is the objective of this group."

A difficulty already experienced is that of finding qualified personnel for the work. A problem still to be worked out is the extent of authority such inspectors would possess. Tentatively, it is planned that the organization of labor analysts would be set up on a regional basis with inspectors for a specified number of states or industrial areas, with others detailed to specific industries.

**JOB CONTROL** under voluntary agreement is now being given a thorough trial in a number of industrial areas. Shortly after it was put into effect in Detroit, the same method of "freezing men to jobs" was extended over the whole Michigan industrial area. A similar plan was then established in other sections such as Boston, Des Moines and Northern New Jersey. Washington observers are watching results closely, for it is fairly well understood that if these trial areas do not work out successfully, some form of legislative action will be taken to provide a national draft of men and women for jobs for which they may be suited or trained.

WMC officials, however, predict that some form of manpower control will be in effect in every major industrial community in the United States within three months and insist that it will be wholly voluntary. According to WMC there are 270 such industrial areas. At present, labor shortages have developed in 102 of these and are anticipated soon in 77 more. "Only 91 have enough labor to meet current war production schedules and future war contracts will be channeled to those labor surplus areas in larger numbers under new WMC policies."

**HIRING AND RECRUITING ACTIVITIES** will not be restricted to the U. S. Employment Service, McNutt has announced. "We intend to make use of all sound and proved facilities that will put the right workers in the right jobs at the right time. Union hiring halls and company personnel offices that are functioning on a sound basis should continue in operation. Wherever the requirements of sound manpower policy are violated, it may be necessary to limit hiring, solicitation and recruitment to the U.S.E.S. Such violations would include pirating workers, labor hoarding, discrimination in hiring and similar practices which prevent using local labor supply for maximum effectiveness in war production."

More stringent personnel cuts are predicted. McNutt said: "The coming impact of selective service withdrawals on industrial personnel is still not generally realized. Employers must accustom themselves to the fact that, as the war goes on, the armed services will almost certainly claim every replaceable male employee of military age and fitness in every industry, regardless of its essentiality. In any average plant, the withdrawals of 1943 will probably be equal to the total of all previous withdrawals since the start of the war."

**SELECTIVE SERVICE BUREAU** OF WMC has been directed by McNutt to allow temporary deferment for college and university students and instructors in certain medical, engineering and other technical fields. These include all graduate students enrolled in approved engineering curricula and all undergraduate students who have completed one year of study in approved engineering curricula as well as those specializing in chemistry, physics or bacteriology and are within two years of the completion of their specialized studies.

In an amendment to Occupational Bulletin No. 10, the Bureau has added industrial engineers, sanitary engineers and bacteriologists to the list of critical occupations. Accountants, economists, industrial managers, personnel administrators and statisticians have been excluded. Occupational Bulletin No. 23 covers critical occupations in Educational Services listing particularly instructors in vocational training. Bulletin No. 43 establishes essential activities in Technical, Scientific and Management Services, including the supplying of technical, scientific and management services

## Text of Nelson Order Creating Aircraft Board

The Assistant Chief of the Bureau of Aeronautics, Navy Department The Recorder of the Board, who shall be appointed by the Chairman of the Aircraft Production Board

### Section 3. Functions of the Board:

.01 Subject to the direction of the Chairman of the War Production Board, and with the advice and assistance of the Aircraft Production Board, the Chairman of the Aircraft Production Board shall be responsible for the central direction of aircraft production.

.02 In discharging his responsibilities under Section 3.01, the Chairman of the Board, and such assistants as he may designate, shall have authority to inquire into any feature of the war production program, including its scheduling and the scheduling of components, and shall have access to such records of the war agencies as relate to war production, may consult freely with the heads of the war agencies or any of their various subordinates charged with the preparation and maintenance of the program or any parts thereof, and may consult freely with any supplier or group of suppliers of war products or components of war products.

.03 The Chairman of the Aircraft Production Board shall be responsible for and direct the scheduling of the aircraft production program or any part thereof of the Army and Navy, and shall issue such directives through the respective supply branches of the armed forces as he may deem necessary to ensure attainment of the aircraft production program.

### Section 4. Orders Superseded:

.01 Orders or parts of orders, including General Administrative Orders 2-23 and 2-33, the provisions of which are inconsistent or in conflict with the provisions of this order, are hereby rescinded or modified accordingly.

### Section 5. Effective Date:

.01 This order shall be effective from and after December 9, 1942.

DONALD M. NELSON, Chairman

to establishments engaged in war production; union management negotiation services; and the publication of technical and scientific books and journals. Further essential activities are listed in Bulletin No. 42 which covers occupational classifications in the Repair and Hand Trade Services.

**RAILROAD AND AIRLINE LABOR CASES** will still be handled by National Mediation Board. Efforts have been made to have such labor litigation transferred to NWLB under the contention that all such disputes rightly come under the President's Executive Order to the Office of Economic Stabilization controlling wages as an anti-inflation measure. However, President Roosevelt has ruled that the present machinery should be continued.

Commanding the carriers for their cooperation under war stress, George A. Cook, Chairman of National Mediation Board, says in his annual report: "In the calendar year 1942 there has not been an authorized strike by any of the 21 Standard Railway Labor Organizations in the railroad industry, nor the Pilots, Mechanics, etc., in the airline industry. They have kept their pledge to the President."

**EXEMPTION FROM RENEGOTIATION** may be possible for all firms with government contracts or sub-contracts totalling less than \$500,000 a year. Steps are now being taken by the Procurement Policy Division to change the present regulations which make subject to renegotiation all firms with \$100,000 or more of government work. The Procurement Policy Board, spokesman of which is Houlder Hudgins, is composed of representatives of all the procurement agencies, WPB, Navy, War, Maritime and Treasury.

**A SPECIAL AIR CARGO PRIORITY CERTIFICATE** to fit into the existing world-wide air service for the import of cargoes of strategic importance to the war effort has been arranged by WPB. Loadings for the air service, which is under control of the Air Transport Command of the Army and Naval Air Transport Service, are arranged by the Board of Economic Warfare, through government procurement agencies. A system of WPB priorities and quotas has been in existence since April, covering all strategic commodities suitable for air transport. To this is now added the special certificates covering shipments of an emergency character.

CONRAD CAMPBELL

# Pan-Air's Huge Strato Clippers-



## Protected by General over wartime's new lifelines!

• Pan American Airways' Clippers . . . of both land-plane and seaplane types . . . are making history these days on vital flights throughout the Americas and overseas to far corners of the world! And on a high percentage of the Clipper fleet are General Tires . . . chosen by PAA as standard tire equipment . . . and proved through years of use over routes to and through Latin America, China, Africa, India, and Alaska.

General Tires were chosen by Pan American because General stands up under strenuous Clipper service. Stands up under heavy, fast landings and take-offs . . . on every surface, in any temperature . . . on hot, sun-baked sandy fields in Africa or the frozen tundra of Alaska!



Photographs courtesy  PAN AMERICAN AIRWAYS SYSTEM.

(Large Photo) Pan American's Strato-Clippers (4-engined Boeing-307's) are commercial versions of the Flying Fortresses.

(Below) Checking in Strato-Clipper express and mail . . . up from South America in less than a day!

Yes, General Airplane Tires are proving their quality in every branch of aviation. On commercial airlines, on private ships, in the CAP and in the service . . . on fast carrier-borne fighters, Army and Navy trainers and on the heaviest bombers. Flying men everywhere rely on General's long practical experience in aviation tire manufacture . . . rely on General for safety!

See your Fixed Base Operator or write:

THE GENERAL TIRE & RUBBER COMPANY  
Aviation Division • Akron, Ohio



# TOMORROW...THEY'LL BE FLYING



IT won't be long. Very soon, now, boys and girls like these will be flying the planes of tomorrow... planes rivalling the automobile in practical usefulness... planes in which all America will take to the air on a scale only dreamed of today.

Aircooled Motors Corporation is proud to think that many of them, from their earliest training, will learn to trust the power and dependability of Franklin engines.

Franklin's 43 years of air-cooled engine building experience have made these engines the choice of practically all light plane manufacturers. Looking

toward the future, Franklins already have powered several of the most promising new planes, including the amazing Sikorsky helicopter and [redacted].

Yes, these boys and girls can count on Franklin to build ever-finer engines for tomorrow's finer planes.

AIRCOOLED MOTORS CORP., SYRACUSE, N. Y.



DESIGNERS AND BUILDERS OF WARPLANE ENGINES FOR THE ARMY AIR FORCES and NAVY BUREAU OF AERONAUTICS



*"Sure I sank you! I kept telling you y' couldn't sail your fleet right into my positions without air support!"*

## Letters

Philadelphia, Pa.

As a steady reader of your excellent periodical, I thought I would write to tell you on this New Year's eve that when people ask me what aviation magazines to subscribe to, the answer is that for my own purposes, **AMERICAN AVIATION** always contains the most up-to-date news and gets read the day it comes in rather than being set aside until idle time is available.

In particular, I think you deserve high compliments on your editorials, which are powerhouses. It has been my experience that editorials are usually put in the back of the book somewhere because they do not rate front page attention. They are usually a rehash of the news that you have already read, but your editorials are knock-down and drag-out arguments to get some action where action is vitally required, and I am sure that they have in many cases got action. I have not agreed with every one of them, but such powerful articles cannot get agreement from everyone.

I hope that as you see things happening that are not to the interest of the non-scheduled pilot,

## Obituary

### Col. D. M. Keiser

Col. Donald M. Keiser, 28, Chief of Staff of the Ninth U. S. Bomber Command, died Dec. 11, 1942 of natural causes at his quarters in the Middle East. Keiser became a colonel Dec. 1 after only six years in the Air Forces. Beginning in Sept., 1941, he was successively decorated with the Distinguished Flying Cross, the Silver Star, and on two occasions with the Oak Leaf Cluster for "outstanding bravery in combat and extraordinary achievement in aerial flight," according to the War Dept.

### Albert Kahn

Albert Kahn, 73, widely known industrial architect, died Dec. 8, 1942 at his home in Detroit. His firm has designed plants for Curtiss-Wright Corp., Wright Aeronautical Corp., The Glenn L. Martin Co., Ford (Willow Run), and for Pratt and Whitney Aircraft, division of United Aircraft Corp. During World War I he designed practically all of the Army air fields.

you will hew away at them with just as great force . . .

LAURENCE P. SHARPLES, Treasurer  
Aircraft Owners and Pilots Assn.

## AMERICAN AVIATION to Publish Universal Airline Guide

American Aviation Associates, Inc., publishers of **AMERICAN AVIATION** and two other aeronautical periodicals, will launch a fourth publication March 1 to be known as **UNIVERSAL AIRLINE GUIDE**. It will be a complete listing of airline schedules, revised monthly, and published in Chicago, Ill.

Stuart Chase, for eleven years editor of **The Official Aviation Guide**, has been appointed managing editor. H. D. Whitney, for thirteen years with United Air Lines and recently secretary of that company's schedules committee, has been named assistant managing editor.

Details as to the office location, subscription rates, etc., will be announced in **AMERICAN AVIATION** for February 1. **UNIVERSAL AIRLINE GUIDE** will be operated as a publication of American Aviation Associates, Inc., but with independent offices in Chicago under the direction of Mr. Chase.

## What Others Say

**SIR SAMUEL HOARE**, British Ambassador at Madrid—"Certain it is that in the air we are already gaining a definite superiority. As one who has been four times Secretary of State for Air and who has watched the progress and achievements of the Royal Air Force with much more than an outsider's admiration, I have throughout the whole course of the war been convinced that the decisive change in our fortunes would first show itself in the air. I believe that this change is now taking place. If this be so, we must exploit it to the full, remembering always that in air warfare superiority can quickly shift with some new type or invention to the enemy, and that it is vitally necessary to concentrate continuously upon every possibility of aeronautical improvement."

**NEW YORK HERALD TRIBUNE**—"We have tried 'priorities,' we have tried 'allocations,' and we have tried 'PRP' (the Production Requirements Plan) in an effort to achieve a synchronized program of war production. Now the formula is to be changed again, this time to 'CMP,' or the 'Controlled Materials Plan' . . . The workability of the scheme . . . will be tested in operation. It will be extremely difficult to cut a clear path through the bureaucratic jungle that has grown up around procurement and allocation in Washington. But at least a plan has been presented which bases American production on the means available to do the job—which is such a common-sense notion that one wonders why it arrived so late upon the scene. Perhaps its quality caused the delay; good sense has been uncommon in Washington for some time."

**ARMY AND NAVY JOURNAL**—"Once more the value of the battleship has come to the fore . . . No one doubts that a dreadnaught will continue to be essential in naval operations, but the experience of the current war is certain to modify and expand its characteristics. Our naval experts are studying with intense attention the reports they are receiving in order to determine what greater protection and compartmentation should be provided, the strength of the anti-aircraft batteries with which they should be equipped, the number of planes they must have for defense and offense, and especially the maximum of speed that can be attained. It is not forgotten that the George V and the Repulse were sunk off Malaya by bombs, and reports from the South Pacific tell of heavy and light cruisers, as well as destroyers, so lost. There is the further fact that surface vessels find it expedient to move at night, and the battleship, protected by darkness, is able to reach its target and smash it. There is no question that an umbrella of planes is essential in daylight for the battleship as it is for the cruiser and destroyer, and this umbrella must be provided either from the deck of the ship or from an accompanying carrier. In the end as in all ship designs, there will be a compromise. Probably the battleship will come to have fewer heavy guns, stronger resisting armor extending from the keel to and including decks and turrets, plenty of anti-aircraft weapons, a flock of planes, and above all, speed. For the moment, our battleships are priceless. The enemy possesses them, and we fortunately have them in superior numbers, and their value is constantly apparent in the work they are doing as members of the Fleet, in guarding convoys and in the mere fact that they are in being. The day of the battleship has not yet passed, but the type we know is passing."



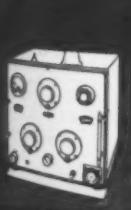
# BENDIX AVIATION RADIO ACCESSORIES

# On the Lifeline to Victory

SHUTTLING men and materiel back and forth across the world to every U. S. front and outpost are ships like these Pan American Lodestars of our international transport system.

The Invisible Crew flies aboard such ships, as it does on virtually every U. S. fighting plane. Radio accessories by Bendix Aviation, Ltd. helps to maintain communication along the lifeline of this vast service which flies to every continent on the globe.

SUBSIDIARY OF BENDIX AVIATION CORPORATION



These control panels are engineered and manufactured by Bendix Aviation, Ltd. They are the nerve center of the airplane, controlling the operation of the radio system.

## OUR PART OF

## THE INVISIBLE CREW

#### PRECISION



# 5 More Lines Attain Self-Sufficiency, Board's Air Mail Rate Orders Show

## PCA Gets .3 Mill; Same Proposed for Others

By ERIC BRAMLEY

**F**IVE more domestic airlines are definitely out of the so-called "subsidy" class, according to recent rate orders issued by the Civil Aeronautics Board.

A rate of .3 mill per pound-mile for carriage of mail has been set for Pennsylvania-Central Airlines, effective from June 1, 1942. The same pay is proposed by the Board for United Air Lines, TWA, Western and National, and these companies have been instructed to show cause why such rate should not become effective from Jan. 1, 1943.

Thus, the total of domestic self-sufficient airlines reaches seven at this writing, the other two being American and Eastern. More show-cause orders are expected shortly.

Although each of the above five airlines would realize substantial profits even without mail pay, the CAB warned that excess profits taxes will probably cut these down considerably.

In each case the Board also warned that passenger rates are being studied by it "and will be given early consideration."

Summaries of the cases follow:

### PCA

This final decision stated that under a .3 mill rate, PCA will show profits of \$664,407 yearly before Federal income and excess profits taxes. Mail pay will amount to \$194,410 yearly. Without mail pay, the company would realize profits of \$469,997 yearly, or 17.60c per revenue mile before taxes.

CAB's estimate of PCA's future

yearly non-mail revenues was: passenger, \$2,614,215; express and freight, \$212,512; excess baggage, \$26,142, and incidental, \$124,708, or a total of \$2,977,577.

Operating expenses were estimated at: aircraft, \$1,106,774; ground, \$837,748; passenger service, \$115,333; traffic and sales, \$227,840; advertising and publicity, \$19,222, and general and administrative, \$200,000, or a total of \$2,506,917.

Estimates, CAB said, show operating costs of 93.93c per revenue mile, which is "far in excess of the cost recorded for carriers conducting operations with similar types of equipment . . ." PCA "should be able to effect further economies which will reduce its operating cost per mile . . ."

For the period from Oct. 9, 1940 to May 31, 1942, the Board set PCA's rate at 24.47c, resulting in the company receiving an additional \$529,840 mail pay for that period. Most of this is to cover the Pittsburgh-Birmingham, Norfolk-Knoxville and Pittsburgh-Buffalo routes, for which rates had never been set.

### United

A .3 mill rate for UAL will result in that company making a profit of \$8,345,222 yearly, before federal income taxes, the Board's show-cause order said. Upon this basis, UAL's annual mail pay for the future is estimated at \$4,177,500.

Even without mail pay, the company would show a profit of \$4,167,722, or 21.30c per revenue mile, before income taxes, or a return of 24.66% before taxes on reported investment as of Sept. 30, 1942, the order explained. It added that profits from UAL's Army contract operations are not included in this figure, nor "does it give consideration to the fact that some of the total investment is allocable to these contract operations."

UAL's present air mail rates are: AM-1 (New York-Oakland segment), 17.5c; AM-1 (Salt Lake-

Seattle-Spokane segments), 26c; AM-11, 18c; AM-17, 37c and AM-57, 19.5c.

Total non-mail revenues have not decreased despite recent curtailment of schedules, and operating expenses have decreased, the Board found. This decrease was attributed to "the allocation of certain indirect charges to services operated under government contracts, and the reduction in the number of miles operated in scheduled air transport service."

UAL's total investment as of Sept. 30, 1942, was \$16,901,917, the order said. It found, however, that required investment for scheduled operations is \$8,372,339 and that \$4,678,995 excess funds are available for the purchase of additional equipment and the expansion of service.

"These excess funds were obtained in the exercise of proper managerial discretion and will be required in the future," CAB said. "We find that the total amount of such funds should be taken into account as part of United's investment for rate-making purposes. This results in a total investment of \$13,051,334 for scheduled air transport services and, allocating on the basis of pounds-miles of traffic anticipated, an investment of \$2,400,140 for the mail service."

UAL's estimated revenues and expenses for a future year were given as follows: revenue miles 19,564,745; passenger revenues \$14,982,682; express \$2,720,960; excess baggage \$211,256; other non-mail revenue \$387,182, resulting in total non-mail revenues of \$18,302,080.

Expenses were: flying operations \$4,108,596; ground operations \$2,857,914; flight equipment maintenance-direct \$1,136,712; ground equipment maintenance-direct \$249,869; equipment maintenance-indirect \$412,882; passenger service \$1,232,059; traffic and sales \$1,286,182; advertising and publicity \$396,808; general and administrative \$1,517,612; depreciation-flight equipment \$675,025; depreciation-ground equipment \$20,000; total operating expenses \$14,131,000.

### C. M. Knoble Joins PCA as Manager of Mail, Carr

Charles M. Knoble, one of Post Office Department's air mail employees, resigned his position as assistant intendant of air mail Jan. 15 in Pennsylvania. Knoble was manager of air mail press cargo.

His successor at the issue went to press.

Knoble joined the PO's air service in May, 1920, as a clerk at College Park, Md. At that time the only U. S. air mail was between New York and Washington.

Later in 1920 he became a member of the PO's Washington headquarters. On July 1, 1934 he was named chief of the operations division of the air mail service, and on July 1, 1939 became air mail superintendent of air mail.

Knoble is the second air official to leave the PO to join airlines, the first being Charles Graddick, who resigned as superintendent to become United Air Lines' express-mail-freight director.

tion-ground equipment \$20,000; total operating expenses \$14,131,000.

### Western Air Lines

With a .3 mill rate, WAL will realize profits of \$418,667 before Federal income taxes, CAB found. Total revenue was estimated at \$188,000.

Without mail pay, the company would show a profit of \$230,000 yearly, or 11.65c per revenue mile before income taxes. Such profit amount to a return of 13.76% on investment before income taxes.

Operating expenses for all classes of traffic will amount to approximately \$14,131,000.

(Turn to page 37)



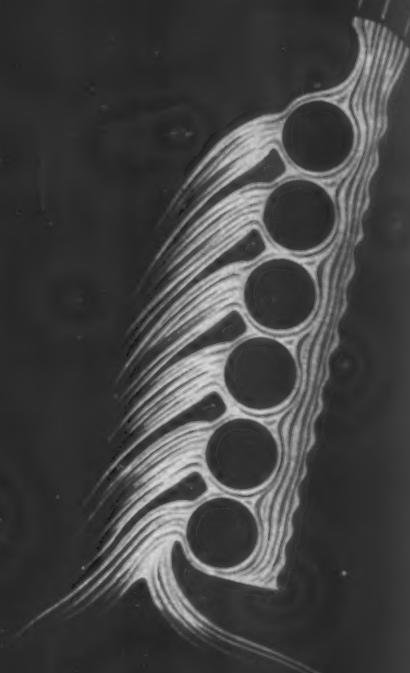
**War Freight:** Expedited transportation of military and high priority cargo is one of the airlines' most important war jobs. Photo on left shows military cargo being loaded into a converted United Air Lines DC-3, while an Army man checks it off. In the center is one of the few interior pictures released to date, showing how the

cargo is securely fastened. Note screens over the windows. On the right, United's New York-Salt Lake all-cargo schedule prepares for departure. Planes on this run carry commercial cargoes which for the most part are priority traffic. From Salt Lake, express is carried by passenger plane to the southwest, west and northwest.



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## Ranger Solves the In-Line Air Cooling Problem

A scientifically engineered air-scoop, baffle, and air pressure "reservoir" arrangement delivers uniform air pressure at each cylinder, maintaining uniform temperatures in all cylinders at all times.

When Fairchild began its researches into the air-cooled, inline aircraft power plant, it began "from scratch." The formidable difficulty of air-cooling cylinders which were set one behind another had discouraged many. Interest had been diverted to radial air-cooled and liquid in-line design. Fairchild believed that the tremendous advantages of air-cooling combined with those of inverted, in-line arrangement were vital to this country's aero-

nautical progress. Fairchild spent a decade in the laboratory developing such an engine type . . . the Ranger. A simple yet amazingly efficient method of "pressure cooling" solved the primary problem. Today—

the only engines of their kind in America—Ranger air-cooled, inverted, in-line engines are powering the planes of the United Nations. They are the most efficient and reliable engines in their power class. They not only justify in every respect the years spent in their development but, as with all Fairchild achievements in the science of aeronautics, they bear the unmistakable Fairchild "touch of tomorrow." Continuing researches demonstrate that they are the beginning of a new and brilliant chapter in aircraft engines and the planes which they make possible.

### ON THE BEAM

"This government, the offspring of your own choice, . . . has a just claim to your confidence and your support." George Washington



AIRCRAFT ENGINES

Division of Fairchild Engine and Airplane Corporation • Farmingdale, Long Island

IN ALL BATTLE AREAS ARE FOUND  
BOMBER PILOTS *trained*



*With*  
**JACOBS Engines**



The majority of twin-engine Training Planes in the  
United States and Canada are powered by JACOBS.

JACOBS AIRCRAFT ENGINE CO.  
POTTS TOWN, PENNSYLVANIA, U. S. A.

# Railroads Should Prepare to Engage in Flying of Freight, Official Warns

## Allocation of Transportation Suggested

THE railroads of the U. S. should be prepared to engage in the flying of freight when the time comes that that service is the most economical, and they should lay well-considered plans now, L. K. Sillcox, first vice-president of the New York Air Brake Co., railroad supplier, said in a December address.

Speaking at Harvard University's Graduate School of Business Administration, Sillcox urged the railroads not to repeat their errors in judgment "which produced a false sense of competitive security until considerable passenger and freight traffic had turned irretrievably to highway bus and truck, respectively."

Perhaps the greatest achievement in maintaining a sound transport policy would be "the allocation in the public interest of transport services, rigorously regulated and required to function according to up-to-date methods," the speaker said.

The U. S. he continued, has the oldest and the newest tools of transportation, "but in most cases not in any way related in their development."

"We are faced with the challenge to compose this difficult condition and it would appear that some centralized agency, perhaps the railroads because of their background of experience and trained organization, should carry the responsibility."

Sillcox asserted that the railroads "as a whole have not displayed high courage in promoting their services before the public. There was a defensive attitude when their first passenger traded in a railway ticket for a seat in a plane. They have constructed a barricade on their second line and fought their battles from there, but it seems to go on about them of which they are not a part."

The history of all freight transport "narrows down to the plain fact that traffic normally moves by the cheapest route or agency no matter how provided," he said.

Later he added: "With no background of individual experience, and no opportunity of obtaining direct knowledge, one is necessarily prone to the most extravagant speculations which, if repeated sufficiently, convey a lasting impression. Insofar as air freight is concerned, the public currently is being subjected to this form of per-

### Air Express Gains

Air Express Division of Railway Express Agency reports it handled 2,357,094 lbs. during Oct. 1942, an increase of 123% over the same month in 1941, and a record breaker for the eighth successive month. Shipments currently were 129,396, up 8.9% over Oct. 1941, and gross revenue for Oct. 1942 showed an increase of 142%. Nationwide air-rail shipments increased 32% over a year ago.

suasion and is, in general, impressed. The aircraft designers and operating companies are challenged with the necessity of transforming these prophecies into facts if the public is to remain impressed. This is a chapter yet to unfold."

Discussing wartime air cargo, Sillcox stated that its value lies in delivering replacement parts to fighting equipment, or other critical supplies. "The cargo plane should, and will, continue to supplement the plodding surface ship, not replace it."

After explaining air express costs and rail express and freight traffic, the speaker said: "When no authority in the aviation industry estimates that ton-mile flying costs can be reduced with any currently projected airplane design to the maximum rate borne by any commodity transported by rail in carload lots, it is extremely difficult to share the enthusiasm displayed in some quarters and publicized by the public press that the airlines will make serious inroads into carload freight traffic following the present war."

Discussing the present arrangement between the airlines and Railway Express Agency, he remarked that "although critics of the present practice of delegating ground assignments to a wholly railway-owned corporation insist that the airlines would be favorably affected if they provided these facilities through a separate agency, one must conclude that a new agency would require years of development at a tremendous cost penalty before it could compare economically with the present arrangement."

The necessity for frequency of flights is advanced by some authorities as an argument favoring continuation of present "combination" planes, carrying both passengers and goods, Sillcox explained, adding that "while this view is not without reason . . . successful air competition should develop sufficient tonnage to warrant frequent all-cargo flights between the larger cities with the combination flights serving smaller communities on slower schedules."

### Mail Rates

(Continued from page 34)

mate .221 mill per pound-mile, the Board said.

WAL's present rates are 37c on AM-13 and 40c on AM-19. No rate had been set for AM-52.

For a future year, WAL will operate 1,979,134 revenue miles and 101,727 non-revenue miles, the Board estimated, adding that revenue passenger-miles will be 23,750,000. Average pay passenger load was given as 12.00 and average fare per mile as 5.40c.

Non-mail revenues estimated were: passenger \$1,282,500; express and freight \$225,423; excess baggage \$26,125; miscellaneous and incidental \$72,634; total non-mail revenues \$1,606,682.

Operating expenses were: flying operations \$435,732; ground operations \$206,873; flight equipment maintenance-direct \$145,660; ground equipment maintenance-direct \$18,560; equipment maintenance-indirect \$51,758; passenger service \$128,013; traffic and sales \$104,025; advertising and publicity \$40,000; general and administrative \$97,780; depreciation-flight equipment \$124,198; depreciation-ground equipment \$23,521; total operating expenses \$1,376,121.

### National Airlines

NAL, the order said, will realize a profit of \$379,329 before income taxes under a .3 mill rate. Mail pay will be \$99,722.

Without mail pay, the company would have a profit of \$279,607, or 16.9c per revenue mile, before taxes, equal to 38.77% return on investment.

NAL's present rate is 28c per airplane mile for AM-31 and 39.

The company's balance sheet as of Sept. 30, 1942, "reflects a very sound financial position," the Board said.

Non-mail revenues for a future year were estimated as: passenger \$960,817; express and freight \$20,601; excess baggage \$42,724; miscellaneous \$33,396; total non-mail revenues \$1,057,538. Revenue miles to be flown were 1,654,430.

Operating expenses were given as: flying operations \$297,797; ground operations \$83,538; flight equipment maintenance-direct \$119,615; ground equipment maintenance-indirect \$5,241; equipment maintenance-indirect \$33,060; passenger service \$77,248; traffic and sales \$47,832; advertising and publicity \$20,094; general and administrative \$35,001; depreciation-flight equipment \$52,967; depreciation-ground equipment \$5,538; total operating expenses \$777,931.

## REA Promotes Cummings; Four Managers Named

P. H. "Pat" Cummings, Railway Express Agency's Chicago air express representative, has been promoted to the position of air traffic executive, succeeding J. M. Shanaphy, who has been named executive representative attached to the president's office.

In addition, to deal with problems involved in handling increased volume of air express, REA has announced creation of the post of air express manager operating divisions throughout the country. The appointees are Ralph W. Starkey for the eastern departments, with New York headquarters; E. L. Head, central depart-



Cummings

in each of its four divisions throughout the country.

The appointees are Ralph W. Starkey for the eastern departments, with New York headquarters; E. L. Head, central depart-



Lickteig



Head

ments, Chicago; M. G. Lickteig, western departments, San Francisco; V. M. Grimsley southern departments, Atlanta.

"Each of these air express managers will further coordinate the efforts of express agency personnel in the promotion and expedited handing of air traffic and will work in close cooperation with com-



Grimsley

Starkey

cial airlines to develop the traffic in anticipation of present and post-war growth," the announcement said.

The four new managers have had wide experience in operating and sales promotional work in both rail and air express, it added.

### Braniff Men Into Service

During 1942 more than 125 of its personnel were called into the armed forces, Braniff Airways, Inc., announces.



*The Collier Trophy*

**CITATION**

**O THE ARMY AIR FORCES  
AND THE AIRLINES OF  
THE UNITED STATES**

**For Pioneering World-wide  
Air Transportation Vital  
to Immediate Defense and  
Ultimate Victory.**

## To win the Battle of Distance

- The job in North Africa is a striking example of what American fighting men and fighting equipment are doing, today, on distant battlefronts. These far-flung theaters of war are supported by supply lines that literally gird the globe. "Armies can never be better than their supply forces."
- Never before in world history has a nation undertaken such a gigantic transportation job. The growing strength of the United Nations everywhere is a tribute to America's supreme effort in the great battle of distance.
- The Army Air Transport Command, the Naval Air Transport Service and the War Shipping Administration have organized and are directing these amazing movements of men and materials. Due to their combined efforts, huge air and sea fleets are ranging world-wide routes, speeding delivery of the ingredients of victory.
- American Export Airlines and American Export Lines, with giant, four-engine flying boats and new, fast cargo ships, are serving in this battle of distance.

**American Export** LINES  
AIRLINES

25 BROADWAY, NEW YORK

# Airline Commentary

## State Can Tax Airline's Entire Fleet, Court Rules

The industry was heartened by the reappointment of Welch Pogue as chairman of the Civil Aeronautics Board . . . Probably more than any other chairman, Pogue has spread the gospel of aviation . . . His recent actions in particular have clicked . . . The appointment of Edward P. Warner as vice chairman was also well received . . . In the past, Warner was often accused of being a retarding influence, being so exacting in his rulings that he held up decisions . . . However, comments from many sources recently have indicated that Warner is one of aviation's best men on the Board . . . He is taking a liberal attitude on rates, equipment and other airline problems, and is pushing for action to clear the market . . . Most encouraging sign is the way he has delved into the problem of aircraft airworthiness requirements for air cargo planes, so regulations won't be so stiff for ships carrying only mail, express and freight . . .

Charles Knoble, a 22-year veteran of the Post Office's air mail service, is joining Pennsylvania-Central Airlines as manager of air mail and freight . . . As was the case with Charlie Graddick, who left the PO to join United, Charlie Knoble has seen that all the airlines got an even break at the PO . . . His position as assistant superintendent of air mail has been a thankless one . . . PCA couldn't have picked a better man . . .

When Sam Solomon, Northeast president, opened his Washington office as director of the Airlines War Training Institute he found four letter boxes on his desk and had a hard time figuring out uses for all of them . . . He had a brainstorm for one, however . . . He had his secretary put on the letters "P.O.U.T.", which stand for "put off until tomorrow" . . . Because Sam is a good executive, not much stuff finds its way into that box . . .

One of the smartest airline advertisements of 1942 was the one run by TWA in newspapers during December . . . Entitled "What About Airline Safety and Service?", the ad answered such questions as the following: "In view of the more intensive use of its planes, how does TWA keep them in first-class condition?" . . . "How does TWA manage to have sufficient experienced pilots, with so many men called to military service?" . . . "How are TWA planes kept mechanically up-to-date at this time?" . . . These are questions which, according to more than one airline official, have been bothering the traveling public . . . The TWA answers should convince doubters that airline maintenance, despite the war, is more thorough than ever before . . .

We note with interest that press releases from TWA now call the company TWA Airlines . . . A good idea . . . The public is too apt to confuse the initials TWA with TVA or something else . . .

One of aviation's most important decisions found its way into the record books in December, when the Minnesota Supreme Court ruled that Northwest Airlines must pay personal property taxes to Ramsey County on its entire fleet of airplanes . . . In doing so, the Court adopted the so-called "ship rule," under which Minnesota, as the home port state, can tax the entire fleet . . . Under the "railroad rule" only a proportionate part of the fleet would have been taxed . . . Skipping the details, it is sufficient to say that the case raises numerous new problems for the airlines . . . And from the legal side, some brand new decisions may find their way into the records . . . There are many people who hold that aviation can't be governed by either a "ship rule" or a "railroad rule," but needs something new . . . Responsible officials say privately that the Minnesota case is "terrible" as far as the airlines are concerned . . . But they wonder what can be done . . .

Speaking of Edward P. Warner, as we did earlier in this column, he has written a very interesting and significant separate opinion in connection with one of the Board's rate cases . . . He shows that the Post Office (which has always maintained that air mail operates at a loss) will make a profit of 1.65c on every air mail letter carried by an airline receiving 3 mill per pound-mile mail pay . . . This is 40% more profit than the PO makes on first-class mail . . . Think that one over . . . We plan a story on it soon . . .

E.B.

In a decision of vital importance to all U. S. airlines, the Minnesota Supreme Court ruled in late December that Northwest Airlines must pay to Ramsey County personal property taxes and penalties of \$18,266 on its entire fleet of planes.

The Court's 4 to 3 vote upheld the contentions of Ramsey County and the state that NWA is subject to these 1939 taxes.

The majority opinion said that the state has the power to tax the fleet "so long as no part of it is permanently located in another state." One judge, although concurring in this opinion, warned that remedial legislation should be enacted without delay "lest Congress assert its undisputed power and authorize the incorporation of airlines under national law and control of taxation."

Washington sources familiar with the situation said that this is the first time a court has ruled that a company's entire fleet can be taxed by the state in which its headquarters are located. Not even in the railroad field, it was said, has the question been decided.

Importance of the case was emphasized by CAB Chairman L. Welch Pogue, who shortly after the decision said in an Omaha speech, "It is to be hoped that state tax laws as well as other state and federal laws will not operate to impose artificial burdens on air transport developments."

Pointing out that NWA serves points in eight states and Canada, and has maintenance bases in five of these states, Pogue said: "President offered two rules—the ship rule and the railroad rule. Under the ship rule, urged by the State of Minnesota and adopted by the court, that state as the home port state, may properly tax all of the carrier's planes.

"Some form of the unit rule, applicable to interstate railroad carriers, would justify taxation by the several states through or in which planes might operate based upon the proportionate value of the planes found to have acquired a taxable situs in each state.

"Briefly put, is air transportation in the United States for tax purposes analogous to rail transpor-

tation or to transportation on inland waters; or does it differ so from either that some new theory should apply? The answer to this question is not easy. Theoretically an important element in justifying taxation is the protection which the taxing authority furnishes in return for the exaction. There need be no precise equivalent, but it is generally thought that there must be some reasonable relationship between the benefit conferred and the burden imposed. Without that it has been stated that the tax would be no more than an exaction.

"It is difficult to argue that a state over which a plane might fly but in which it would not stop meets even the minimal requirement of an equivalent in the return for the tax. In traveling nonstop from New York to Chicago could the five states or so over which the plane might fly but in none of which it would stop, properly levy taxes on the carrier's planes? Or should taxing jurisdiction be divided only between New York and Illinois? Would a tax by a state over which a plane might fly but in which it would not stop be merely an exaction, a mere license to pass that state's boundaries, and therefore void as a direct burden on interstate commerce? On the other hand, might it not be economically advisable to permit taxation by the maximum number of states?

"State taxation does not always work out equitably even though sustained by the United States Supreme Court. There may well be an area in which states are free to adopt varying tax measures any one of which may be found valid. It is to be hoped that state tax laws as well as other state and federal laws will not operate to impose artificial burdens on air transport developments. In order to avoid the admitted evils of multiple taxation it may be that the law will some day be further molded in this field by the establishment of some new machinery designed to insure to each state its fair share of tax revenue from air transport operation, and to protect such operations from inequitable state taxation."

### Pogue Re-Appointed CAB Chairman

L. Welch Pogue, chairman of the Civil Aeronautics Board for the past year, has been re-appointed by President Roosevelt as chairman for another year, the term to expire Dec. 31, 1943. At the same time, Edward P. Warner was named vice chairman of the Board, filling the position vacated when George Baker resigned several months ago.

Also during the past fortnight, Oswald Ryan was sworn in for his second term as a member of the Board. During the session of the Senate at which Ryan's appointment was confirmed, Sen. Pat McCarran (D. Nev.) said: "As the author of the act under which Mr. Oswald Ryan is serving, I wish to pay the very highest possible compliment to him for his very able, efficient and progressive administration while he has been in his present position. I think there is no man in the U. S. who could better fill the position . . ."

**NEA Has \$175,000 Profit for 9 Mos.**

Although the second annual report of Northeast Airlines, Inc., East Boston, Mass., shows net operating loss of \$50,986.30 for the year ended June 30, 1942, non-recurring income of \$125,841.38 made possible a profit before taxes of \$175,000 for the nine months ended Sept. 30.

This non-recurring amount, company explained, arose from the "sale of certain aircraft, engines, equipment and parts . . ." and from a gasoline tax refund, which enabled Northeast to show an earned surplus of \$18,646.66 at June 30.

Of total operating revenue of \$1,326,079.30 for the fiscal year 1942, \$401,888.19 came from passengers, an increase of 48.7% over the \$270,133 of the previous year. Currently, air mail revenue was \$393,403.16, against the \$299,200.66 last year, an increase of 31.5%. An increasingly important revenue source is shown in the current \$267,390.17 figure for training school tuition.

Major item in the \$1,370,374.82 amount disbursed for 1942 fiscal operating expenses was \$782,760.67 spent for conducting transportation and flying instruction. Maintenance and repairs amounted to \$302,859.45. General and administrative expenses were \$109,257.33.

In making comparisons of balance sheet standings and operations results, Northeast noted that current assets as at June 30 were \$1,026,804.43 against \$384,276.46 in 1941, and that current liabilities were \$729,547.68, contrasted with \$290,695.06 last year. Approximate net profit before taxes at Sept. 30 of \$175,000, as mentioned above, compares with a net loss of \$26,519.36 in the same period of 1941.

NEA's pilot training division, established in January, 1939, has become a profitable part of the line's operations because it has "more than 200 students in training constantly . . ."

Commenting on the firm's prospects, S. J. Solomon, president, mentioned the possibility of operating additional cargo services and routes for the U. S. Army and commercial route expansion after the war.

**Civil Briefs**

**Rumors Scotched:** CAP advises that all rumors about its coastal patrol are entirely without foundation in fact except that "some items of supply are hard to get." It also suggests: "Don't take (the rumors) even with salt because that would be a waste of salt."

**Membership:** CAP has announced enlistments now total more than 65,000.

**CPT Uniforms:** Forest green uniforms will become required dress for CPT trainees as soon as they can be issued, according to announcement. Uniforms will be issued to each station, and trainees will turn them in at time of transfer to any other station, and in turn will be refitted at the new location. Outfit includes service cap, jacket, trousers, belt and later, khaki shirts.

**Collier Trophy Awarded to Airlines and Air Forces**

The airlines of the U. S. and the Army Air Forces were awarded the Collier Trophy on Dec. 29, 1942 "for pioneering world-wide air transportation vital to immediate defense and ultimate victory."

Vice-President Henry A. Wallace made the award, which is sponsored each year by the National Aeronautic Association. Lieut. Gen. H. H. Arnold, commanding general of the Air Forces, and Col. Edgar S. Gorrell, president of the Air Transport Association, accepted the award for their respective groups.

"I know from my own experience," said Vice-President Wallace, "how closely the personnel and activities of the Army Air Forces and the private airlines of the U. S. are merged. They are both engaged in the same fight over the entire world."

"In handing this scroll to you, Gen. Arnold, recognition is given to the foresight of those in the Army Air Service as well as to our private airlines who have done the fundamental planning which has made possible the rapid expansion of the past two years. Had it not been for this close cooperation in the 12 months before Pearl Harbor, which laid the foundation for a world-wide air transportation system, it is extremely doubtful that our forces could have achieved the success at arms they have during the first year of the war . . .

"And to you, Col. Gorrell, our thanks and appreciation to all of your airlines' personnel—the tireless executives, the pilots and the devoted mechanics who pioneered in this field and thus were able to furnish that vital 'know-how' which has made world-wide air transportation a living, accepted fact . . .

"Item 7 of the Atlantic Charter

proclaimed the freedom of the seas. In the century ahead of us, however, airports throughout the world will be even more essential to the maintenance of a stable peace than Suez, Gibraltar and the Panama Canal were in the past. The use of these far-flung air bases on an international basis by the United Nations can do more than prevent war, however. It can tie the peoples of the earth together. It can assure increasing economic opportunity for humble citizens throughout this modern world where science is bringing us ever closer to each other."

Shortly after award of the trophy, NAA President Gill Robb Wilson announced that Maj. Lester Gardner, executive vice-president of the Institute of the Aeronautical Sciences, had been appointed chairman of the Collier Trophy Committee for 1943.

**ATA Names Raymond**

William T. Raymond, formerly with the press section of the Securities & Exchange Commission, has been named public relations director of the Air Transport Association. Before joining the SEC, Raymond was with the *Wall Street Journal*.

**November Accidents**

Thirteen fatal accidents occurred in non-scheduled flying during December, 1942, an approximate decrease of 25% from the 18 reported for October, the Safety Bureau of the Civil Aeronautics Board has revealed.



**Collier Trophy Award:** Present at the awarding of the Collier Trophy were, seated, left to right, Lieut. Gen. H. H. Arnold, Commanding General, Army Air Forces, who accepted the trophy for the AAF; Vice-President Henry A. Wallace, who presented the trophy; Col. E. S. Gorrell, president of the Air Transport Association, who accepted on behalf of the airlines. Standing, left to right, are Grover Loening, WPB aeronautical consultant; Frank Caldwell, assistant to the president of Northwest Airlines; Gill Robb Wilson, president of the National Aeronautic Association; Rear Admiral P. N. L. Bellinger, Deputy Chief of Staff, U. S. Navy; Maj. W. R. Lovelace, flight surgeon at Wright Field; Maj. Lester Gardner, executive vice-president of the Institute of the Aeronautical Sciences and chairman of the Collier Trophy Committee for 1943; William Redding, executive vice-president and treasurer of NAA, and Dr. George Lewis, director of aeronautical research, National Advisory Committee for Aeronautics.

**Colonial's Mail Rate Reduced**

Colonial Airlines' air mail rates have been reduced by the CAB to 2¢ per airplane mile, effective from Jan. 1, 1942.

Under the order, Colonial, which had been receiving 60¢, will receive \$116,137 less mail pay than it paid during the year ended Dec. 31, 1942.

The new rate will give the company an 8% return on investment after federal income taxes of 44% and will apply to months when average daily mileage does not exceed 1,577 miles.

CAB estimated the company's future yearly revenues and expenses as follows: passenger revenue, \$1,553; express and excess baggage, \$216; total non-mail revenue, \$116. Operating expenses were given as flying operations, \$150,062; ground operations, \$97,386; flight maintenance, \$58,599; ground and office maintenance, \$62,077; passenger service, \$36,491; traffic-sales, \$60,444; advertising, \$11,814; general and administrative, \$60,444; depreciation, \$58,833, or total expenses of \$602,000. Operating loss before mail pay is \$85,977.

Colonial's investment attributable to commercial operations as of Dec. 31, 1942 was \$405,987, CAB said.

It added that the company's rates should not be raised retroactively for the period from Aug. 22, 1942, to Nov. 30, 1942. For this period, Board said: "While Colonial's turn is less than we have approached in several other rate proceedings we do not believe that it is too high in view of the high operating expenses of 105.56¢ per revenue mile recorded by Colonial for the two years ended June 30, 1942, as compared to the costs of all domestic carriers which averaged 66.5¢ per revenue mile, and as compared to the costs of DC-3 operators, which ranged from 55.92¢ to 72.7¢ per revenue mile.

"It is recognized that the comparison of costs per mile of one carrier to similar costs of other carriers is subject to criticism and that because no two carriers operate under identical circumstances, comparative costs do not afford an accurate yardstick for determining the reasonableness of costs. It is further recognized that Colonial conducts operations into a foreign country over a relatively short route which results in somewhat higher operating costs per mile.

"However, where the costs of one carrier are so far in excess of the average costs of the industry as a whole and of the highest costs recorded by any operator of similar equipment, it is reasonable to question the economy and efficiency of management.

"Furthermore, as a result of the sale of flying equipment, the curtailment of service and the allocation to the war contract service of certain overhead costs formerly borne by Colonial, it is reasonable to assume that profits during the period from Sept. 1 to Nov. 30, 1942, will increase over the average for the 32 months prior to Sept. 1 . . .

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## UAL Shows 3rd Quarter Net of \$2,017,659

A considerable reduction in operating expenses, 17.2% from those in 1941, helped United Air Lines earn \$17,559 net profit, or \$1.34 per share, for the quarter ended Sept. 30, 1942, according to company report. Net profit for the same period in 1941 was \$1,242,588, or 83¢ per share.

In the current period, total operating expenses and taxes, \$3,934,978, contrasted favorably with the \$4,218 figure for the same quarter in 1941. Company explains the 1942 amount included "credit of \$631,528 for indirect and overhead expenses incurred in government contract operations from January 10 to August 1942."

An increase of 14.3% in operating revenues in 1942 over 1941, "due to heavy war-time traffic," also did its share in boosting United's profit. For the 1942 quarter, \$7,208.6, shows considerable improvement over the \$6,306,799 realized in the similar period in 1941. This increase, together with reduction in operating expenses, made possible net earnings of \$3,273,988 in the 1942 quarter, against \$1,554,613 in 1941.

Net profit expansion was made possible, also, despite the \$1,345,035 allowed for income taxes in the three month period of 1942. Only \$105,000 was so provided in the equivalent time in 1941. Audit shows that the usual 40% was deducted from current earnings, and that it will not be possible "until after the end of the year . . . (to determine) whether the company will be subject to excess profits tax."

Although mail pound miles increased 95.2%, and express pound miles 159.9% in the current period over a year ago, revenue plane miles flown were down 32.3%. Revenue passenger miles, however, were down only 15.8% from a year ago. W. A. Patterson, UAL president, pointed out that this reduction in revenue plane miles "showed the effect of the company's airplane sales during May and June," and better utilization of passenger seats . . . was responsible for (the small) reduction in revenue passenger miles flown . . . .

In extended comments to stockholders, Patterson said that "third quarter and nine months' earnings have added substantially to the net worth of the company . . . and also should facilitate the company's ability to protect itself after the war and to change over to peace-time operation." He added that United expected to expand ground facilities and to acquire additional flying equipment during the transitional period, and that directors were considering establishment from 1942 earnings of reserves for such purposes.

For the nine months ended Sept. 30, 1942 United had net income of \$2,899,958, against \$680,272 in the corresponding period of 1941.

## Remove Limits on Freedom Of the Air, Pogue Urges

Asserting that the full social and economic utility of air transport in the international field has been "shackled by interminable negotiations and restrictive conditions" imposed by the doctrine of national sovereignty of airspace, CAB Chairman L. Welch Pogue urged recently that long-range planning include the elimination of "many of the existing restrictions on the free operation of air transport services."

Speaking before the Nebraska Bar Association in Omaha, Pogue pointed out that "aviation can be a compelling force in stabilizing the political relationships of the world. The present fight for freedom will be lost to no small degree if we miss the opportunity to accelerate this force by making the great international highways open to all nations."

In a speech before the University Club in New York, he said: "This nation at peace, having within its own borders the distances which enhance the value of air transportation, the greatest industrial power on earth, may look forward to the swift expansion of its domestic air transportation system and to an unparalleled extension of its commerce around the world."

In plugging for freedom of the air, Pogue refuses to speculate as to how far this freedom may go. This, he states, would be guesswork. However, a greater degree of freedom is necessary than exists today, he emphasizes.

Although he has not made a speech about it, he divides possible "freedoms of the air" into four categories: (1) the freedom allowing an airplane of one nation to fly over another nation without landing; (2) the freedom allowing the plane to fly over the nation and to land for technical reasons—refueling, etc.; (3) the freedom allowing

the plane to conduct commercial operations to the foreign nation, provided it is properly licensed, and (4) "all-out" freedom, with everyone flying everywhere.

"The freedom of the air will become a new international problem," he said in New York. "The world as a whole must meet the challenge of air transportation and realize that here at last the nations of the earth have a medium for achieving a basic social unity, an individual and collective commercial development that will bring economic wealth to all."

### PAA Adds Service

"To aid war effort operations," Pan American Airways, New York, N. Y., recently announced it now has two round trips daily between Miami and the Canal Zone. Boeing Stratocliners, seating 33 passengers, service this run. Between Balboa and Brownsville, Texas, Douglas Clippers maintain similar service. Pan American points out that these additional services "are carrying only priority military and diplomatic passengers, mail and express."

### Braniff Uses Women

Braniff Airways, Inc., announces that the first of 30 women radio operators recently started work at its Dallas base. It states that "an equal number of the airline's corps of male radio operators are needed for flight and ground communications along Braniff's . . . foreign Army cargo operation . . . . Training of the women began last May when a new school for women radio operators was opened in Kansas City."



**NWA's New Home:** Home offices of Northwest Airlines, located at St. Paul airport since the company started more than 16 years ago, have been moved to the Krantz Building, 1885 University Ave., St. Paul. The building has over 47,000 sq. ft. of floor space, and with the exception of the maintenance and overhaul offices handling NWA's military project, all departments are located at the new address. Clarence Gros and his NWA engineering staff handled all plans for the building.

## American Airlines Nets \$2,407,480

Reflecting increased earnings, American Airlines, Inc., consolidated statement for nine months ended Sept. 30, 1942 shows net profit of \$2,407,479.77, equivalent to \$3.91 a share common. In the similar period of 1941, net profit was \$2,106,234.43, or \$3.39 a share.

Current provision for Federal income taxes is \$1,847,100, against \$1,040,600 a year ago. Company explains 1942 income tax provision was "only for . . . normal income tax and surtax." Rate was figured at 40% of net. "No provision is believed necessary for Federal excess profits tax," since "ultimate determination" is dependent "upon earnings for the last quarter of the year."

Operating revenue from mail, amounting to \$2,395,707.88 in the 1942 period, was figured on the basis of the rate established Nov. 12, which, by order of the Civil Aeronautics Board, was made effective from April 1. (AMERICAN AVIATION, Dec. 1.) In 1941, \$3,167,780.35 was received by AA from this source.

Profit from sale of aircraft and other property, which amounted to \$216,811.54 in 1941, does not appear on the current statement, since "excess of proceeds over book value for the involuntary conversion of aircraft (is) in the amount of \$1,086,388.93 . . . (company intends) to credit this amount to a replacement reserve for the future acquisition of aircraft equipment."

Total operating revenue during the 1942 period was \$20,093,174.59, which included \$16,195,340.08 from passengers and \$1,170,134.02 from express. A year ago total revenue totaled \$19,393,768.95, from passengers \$15,344,447.74, and from express, \$533,861.01.

### Traffic

Northwest Airlines, Inc., attributes to increased volume of correspondence to 279,962 lbs. of air mail which it carried in November, 1942, an increase of 8,967 lbs. over the previous month. Airmail pound miles for November totaled 238,951,681.

Pan American Airways reports passenger miles flown in the third quarter of 1942 amounted to 97,169,765, against 62,658,172 in the same period of 1941, and compared with 87,769,153 in the second quarter of 1942. Plane miles operated in 1942's third quarter totaled 9,485,208, contrasted with 6,156,191 in the similar period of 1941, and compared with 8,296,418 in the second quarter of 1942.

Braniff Airways, Inc., discloses it has increased by more than 10% passenger miles flown in 1942, even though flight equipment was 50% less. Comparisons between 1941 and 1942 follow (last part of Dec. 1942 estimated, and with 1941 figures in parentheses): Revenue passenger miles, 50,981,595 (45,988,555), up 10.85%; express pound miles, 385,584,696 (222,732,489), up 77.61%, and mail pound miles, 1,082,348,117 (667,771,055), up 62.08%.

Northwest Airlines, Inc., reports it carried 5,181 revenue passengers during Nov. 1942, in spite of a reduction in the number of scheduled daily flights. Revenue passenger miles in the same month totaled 3,488,061.

## TRANSPORT

### Actions of the Civil Aeronautics Board

**Order No. 2033, Nov. 13, 1942:** Suspended student pilot certificate No. 186260, held by Lewis B. Haskins, Jr., for 60 days if civil penalty were not paid before Nov. 20, 1942, or for 15 days if this penalty, a fine "of \$50 or more," was paid. Complaint charged, in part, several alleged unauthorized cross country flights by Haskins. Order permits flying under supervision of instructors at any Army flying school.

**Order No. 2061, Dec. 5, 1942:** Directed that Frank A. Knauer, who was previously refused student pilot certificate for "past violations of the Civil Air Regulations," may now have opportunity to qualify for another certificate.

**Order No. 2062, Oct. 22, 1942:** In the case of applications for certificates of a number of Alaskan airlines, the Board granted 22 operating certificates to 21 airlines denied two applications and dismissed 13 others. Both "regular" and "irregular" routes were authorized.

**Order No. 2063, Oct. 22, 1942:** Authorized Pacific Alaska Airways, Inc., now Pan American Airways, Inc., to conduct air transportation between the terminal point Fairbanks, the intermediate points Hot Springs, Tanana, Kokrines, Ruby, Galena, Koyukuk, Nulato and Golovin, and the terminal point Nome and between the terminal point Fairbanks, the intermediate points Lake Minchumina, Medfra, McGrath, Takotna, Ophir, Flat, Stony River, Sleetnut, Crooked Creek, Napamute, Aniak, Kalskag, and Akiak, and the terminal point Bethel.

**Order No. 2064, Dec. 2, 1942:** Exempted for 60 days provisions of section 401(a) of the Act, 1938, which would prevent Pan American Airways, Inc., from conducting air transportation to and from Moses Point, Alaska, as an intermediate point between the intermediate points Nulato and Golovin, Alaska, on its route between Fairbanks and Nome, Alaska.

**Order No. 2067, Dec. 10, 1942:** Issued certificate to Continental Air Lines, Inc., to conduct air transportation between the terminal point Denver, Col., and intermediate points Salina, Kan., and Topeka, Kan., and the terminal point Kansas City, Mo., inauguration of such service to be delayed until "the national defense no longer requires that . . . (it) be delayed." In the same order, denied applications of Continental Air Lines, Inc., (another route), United Air Lines, Braniff Airways, Inc., and Transcontinental and Western Air, Inc.

**Order No. 2068, Dec. 11, 1942:** Amended Order No. 1785, issued June 5, 1942, so that Robert R. Cline may apply for pilot certificate after Dec. 7, 1942, but restricts such certificate, if issued before June 5, 1943, to piloting while "receiving instruction, making check flights accompanied by inspectors of the Administrator, or while on official Civil Air Patrol flights."

**Order No. 2069, Dec. 11, 1942:** Dismissed, "without prejudice," applications of Aerovias Nacionales Puerto Rico, Inc., and of Colonial Airlines, Inc., for temporary certificates.

**Order No. 2070, Dec. 11, 1942:** Permitted Heustis I. Wells to withdraw petition for a waiver filed with the Board Nov. 9, 1942.

**Order No. 2071, Dec. 12, 1942:** Exempted foreign aircraft operated by Aerovias Nacionales de Colombia, S. A., between Barranquilla, Colombia and LaGuaira, Venezuela, and airmen serving this route from provision of section 601(a) of the Act, 1938.

**Order No. 2072, Dec. 12, 1942:** Amended CAB Form 2780, report of financial and operating statistics for domestic air carriers, effective as of Dec. 12, 1942.

**Order No. 2073, Dec. 12, 1942:** Amended section 32 of the uniform system of accounts for domestic air carriers, in revised instructions for reporting procedure as described in amendment No. 4.

**Order No. 2074, Dec. 14, 1942:** Dismissed complaint filed against Jack M. Blackmore, holder of commercial pilot certificate No. 109115.

**Order No. 2075, Dec. 14, 1942:** Rescinded order No. 2036, issued Nov. 13, 1942, which temporarily exempted American Export Airlines, Inc., from certain provisions of section 401(a) of the Act, 1938, affecting that line's trans-Atlantic operations.

**Order No. 2076, Dec. 15, 1942:** Rescinded orders Nos. 1833 and 1974, issued July 9, 1942 and Oct. 13, 1942, regarding operations of Northwest Airlines, Inc., but temporarily exempted Northwest from provisions of section 401(a) of the Act, 1938, with respect to air transportation to and from Great Falls, Mont., as an intermediate point between Billings and Butte, Mont. A condition to this exemption was that Northwest "shall refrain from carrying local non-priority passengers between Great Falls and Billings, Montana, or between Great Falls and Helena or Great Falls and Butte, Montana."

**Order No. 2077, Dec. 16, 1942:** Fixed a rate of .3 mill per pound-mile of mail carried, on and after June 1, 1942, on Pennsylvania-Central Airlines' routes 14, 32, 34, 41, 46, 51 and 55.

**Order No. 2078, Dec. 14, 1942:** Revoked commercial pilot certificate No. 787, held by Arthur S. Davison, for several alleged violations of the Civil Air Regulations, in the vicinity of United Air Terminal, Lincoln, Neb.

**Order No. 2079, Dec. 15, 1942:** Denied request of Western Air Lines, Inc., for withdrawal of petition for fixing of rates for transporting air mail on Western's routes 13, 19 and 52, since this needs to be determined upon a "system basis," and since no rate on route 52 has been fixed since operations began June 12, 1941.

**Order No. 2080, Dec. 18, 1942:** Temporarily approved the holding by Edward J. Engel of the positions of director in Railway Express Agency, Inc., and in Brewster Aeronautical Corp., and also holding of offices in several related companies.

**Order No. 2081, Dec. 17, 1942:** Dismissed application of Ernest W. Greene and Hawaiian Airlines, Ltd., since Greene "no longer directly or indirectly represents Hawaiian . . . ."

**Order No. 2082, Dec. 19, 1942:** Temporarily exempted Pan American Airways, Inc., from provisions of sections 401 and 404 of the Act, 1938, insofar as such



Bundy

Walker

Sundell

Bates

### In the Services

**Henry C. Hollenbeck**, now on leave of absence from Western Air Lines, is a lieutenant commander in the Navy and has been promoted to command of a Naval Air Transport Squadron operating in the western area.

**Walter H. Wehner**, United's Oakland district traffic manager, has been given leave of absence to accept a commission in the Army. **H. H. Murphy**, United's dtm in Philadelphia, is now a first lieutenant in the Air Force.

### Traffic and Sales

**John H. Standish** has been named United's acting district traffic manager at Oakland, while **K. M. Bates** is filling a similar position at Toledo. **Miss Cherie A. Smith** replaces Bates at Toledo.

**T. N. Taylor**, formerly assistant manager of Braniff's Dallas office, has been named district traffic manager at San Antonio, replacing **Miss L. Adamson**, who has left to be married.

### Operations

**Royal D. Sundell** has been named division engineer of Pan American's eastern division, headquarters in Miami. He has been with PAA 14 years. **Folger Atheare** is PAA's new assistant operations manager in charge of airports and operations ground personnel, eastern division. **Capt. James W. Walker, Jr.**, is now chief pilot of the eastern division, replacing Capt. Robert H. Fatt, Jr., who has been made superintendent of training of that division.

**Miss Dorothy Mallett** has been employed by Braniff as an instructor in navigation at Dallas.

Northwest Airlines has created a new office of plant maintenance and has named **Neal Wood** as plant superintendent.

### Miscellaneous

**V. P. Conroy**, TWA's vice-president-traffic, and **John A. Collings**, vice-president-operations, have been elected to the company's board of directors. One vacancy on the board had been created by the call to active duty by the Navy of **Paul Richter**, executive vice-president, and the directorate had been held by **Harold Warner**, New York attorney.

**Mrs. Helen Bundy** has been named woman personnel consultant for Northwest.

provisions would require PAA to serve Cat Cay, Bahama Islands, as an intermediate point on its route between Miami, Fla., and Nassau, Bahama Islands.

**Order No. 2083, Nov. 24, 1942:** Amended the foreign air carrier permit of Braniff Overseas Airways Corp., which permitted east-west trans-Atlantic operations for a period of 15 years beginning June 1, 1936, to travel also via Lisbon, points in West Africa, Trinidad and Bermuda to June 30, 1943.

**Order No. 2084, Dec. 26, 1942:** Amended certificate of Braniff Airways, to authorize this line to engage in air transportation between the terminal point Houston, Tex., the intermediate point San Antonio, Tex., and the terminal point Laredo, Tex., and between the terminal points Houston, Tex., and Corpus Christi, Tex., at such time as the Board notifies Braniff that the national defense no longer require any delay in starting this service.

**Order No. 2085, Dec. 21, 1942:** Directed Western Air Lines, Inc., to show cause why the Board should not make final the findings and conclusions which fix at .3 mill per pound-mile the rate for transporting mail on Western's routes 19 and 52, which was effective as of Jan. 1, 1943.

**Order No. 2086, Dec. 18, 1942:** Amended certificate held by All American Aviation, Inc., so as to authorize this line to engage in air transportation to and from Nitro, W. Va., as an intermediate point between the intermediate points Charleston, W. Va., and Hurricane, W. Va., subject to the conditions prescribed by parts II and III of section 238.3 of the Economic Regulations of the Board.

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# Will Mfrs. Maintain Airline Equipment

## Writer Pictures Subcontracting Depots at Airports as Potential Factor in Airliner Servicing

By E. J. FOLEY

**A**SSUMING the significant factor of fleet size to be ample, we conceive "change-to-service" maintenance as the ultimate logical technique for application by the air transport operators. There are two possibilities for the disposition of system-units or components requiring servicing or overhaul.

The first, the specialist-shop, airline operated and production-equipped, has been discussed. The second, manufacturers' on-the-spot service and overhaul depots, merits immediate consideration.

Such a setup is obviously possible. Its practicability and desirability are

the elements we have to contemplate. Defining the general scope of the project and sketching the physical outline of the system will best portray our concept. The general aircraft struc-

ture, including fuselage, wings, empennage, etc., may be thought of as requiring no periodic tear-down over-haul under a continuous maintenance system. Therefore, such parts would remain the province of the airlines' maintenance organizations.

Engines, propellers, accessories, landing gear, electrical units, valves, etc. are manufactured items, or "subcontracted," by the aircraft manufacturer. Similarly, under the procedure being discussed the service and overhaul of these items would be subcontracted to their original manufacturer. The principle behind this technique may be expressed generally by saying that exclusive of airframe parts all units will be serviced and/or overhauled by their respective manufacturers.

We can readily visualize the superimposition of such practices upon the "separate maintenance airports" suggested in these columns some time ago. (AMERICAN AVIATION, June 1, 1942). To consider corporate isolation in the form of separate buildings and facilities for each manufacturer would introduce obvious extravagance of equipment and ground area. More practical, we think, would be an engine building, accessory building, instrument building, etc., or perhaps more properly designated, engine area, etc. Through such arrangements, the cost of such generally needed equipment as conveyors, of such common facilities as compressed air and of such general personnel as guards could be prorated among the several contracting companies.

This system applied to major airline maintenance bases would reduce the work required to roughly the following constituents: airframe and interior modification and main-

tenance, and component changes. The net change in airline floor space required would be minus because the increase necessary to accommodate the additional spares would be more than offset by the transfer of the several specialist shops to the manufacturers' areas.

Our discussion of this topic now is prompted by two factors. Today's emphasis upon military aviation highlights the technique of "unit-replacement" as practiced necessarily and successfully by the Services. The valuable experience being gained, we see as a logical energizing sales point for the general adoption of the change-to-service policy by commercial air transportation after the war.

### Expand Service

The validity of our second factor may be debated since it is a conjecture. We cannot help but think that certain manufacturers of the aircraft industry will at the war's end find themselves in a position analogous to that of the automobile industry today; that is, drastically cut production. Here of course, the analogy ends since the causes of the two predicaments are diametrically opposed: for autos, government restriction of supply; for aircraft and parts, economic restriction of demand. If our reasoning proves even partially sound, there may well be an incentive to the aircraft component manufacturer, as there was to the auto industry, to accent and expand the

service and overhaul side of his picture.

Since the subject under discussion is not, in all details, a crisp 1943 concept, but has been superficially experimented with from time to time in recent years by the airlines, our thinking must take into account the pros and cons of experience. Mind you, this technique is no bill of goods that we're trying to sell. It is a potential element in future air transport operation which deserves more than a glance right now. Progress is a process of elimination. The sooner we can review such units of thought, hoarding the good and scuttling the bad, the sooner we shall be ready for tomorrow's detailed planning and operating procedure.

By virtue of his experience, the manufacturer has the know-how that enables him to handle speedily large volumes on a close-coupled disassembly-repair-assembly line. His knowledge of the limitations of the parts and assemblies, his awareness of the niceties of assembly and his adequate spares stocks within his own organization should permit the manufacturer to maintain production-wise.

The airlines can supplement his knowledge with their own standards of performance and the specific inspections and checks they may wish carried out periodically. Further, they will advance to him their fortune of service experience on each unit. If from this information, his service function is simplified and foreshortened, he has absorbed 50% of the possible good. If, from it, his products are improved and necessary redesign expedited, he is more nearly achieving the maximum good.

From the foregoing, we might conclude that production-maintenance stemming from production-manufacture and tempered by service experience is the air transport maintenance panacea. The units we now operate will be serviced and/or overhauled at less cost

and with greater speed than could hope to achieve otherwise. Then too, daily manufacturer contact with our service problems would assuredly guarantee the corporation of the requisite improvements in future design. Red tape and awkward liaison should suffer much from such directness of connection, the potential interchange, perhaps continuous, of personnel ideas.

### Need Cooperation

Before going into ecstasies over the prospects, let us sober up and admit that past experience is little in the way of hope for a Utopia without a mutual interest and desire to attain it by parties, manufacturer and operator. This would indeed mean a radical change in manufacturer point of view.

The airlines which have participated in such a program in the past have admittedly done so under conditions far less ideal than sketched here. Distances have been greater; airport-factory, often 50 miles or more; overhaul facilities offered by the manufacturer may have been little more than a corner of a production shop; attentive inquiry, change of ideas and personnel even of the units themselves, have been often buried in the latter production. Paper work has been tangled up in the manufacturing phase of the business.

Net result in most cases has been that the airline has chosen to spend the necessary men, money and material to take over the processing of all such items themselves. They have done so at the face of what they felt were excessive cost, time delays of any type, and reasonable magnitude, inattention to detail, etc.

### Difficult Point

That the situation could be reversed to the advantageous in which we first saw it would be a difficult point to put across to air transport operators. We do not believe that it ever will be put across unless the manufacturers want it to be and prove their ability to do so.

The reason for this stalemate is understandable. The division of responsibility in the industry portions to the manufacturer making of the product and to the airlines the servicing. This is the order of the day, whether it represents the ultimate in efficiency or not. In the past and even now, so in today's production sweat, the manufacturer has unconsciously otherwise looked upon the several airlines' requests for servicing and overhaul work as impositions.

When conditions made refusal impossible, the manufacturer has taken on the work as a semi-side line. He has not been solicited by the trade, so his service facilities have by no means been kept parallel with his production machine in efficiency. Naturally we have

(Turn to page 60)



**Wiring Board:** Vega Aircraft Corp., Burbank, Cal., claims their technique of using the wiring board for the assembling of aircraft electrical "harnesses" is the most efficient now in use. Shown here, the boards permit the assembly of several harnesses simultaneously and some of them are used as test boards for checking the continuity and resistance of the circuits. The nearly vertical position of the boards conserves floor space and makes the wiring work more convenient.

## Simplified Brake Valve Introduced

Aircraft Accessories Corp., Burlingame, Cal. announces a new simplified brake valve, designed for single-pedal operation of brakes from the main hydraulic system through an accumulator. It has only two moving parts in addition to the valve and the working units are contained in a cartridge which is readily replaceable.



In weight, said to be less than that of other valves of the type, is 15 pounds for a double unit (two valves in a single housing) contained in a single housing so simple for installation. The valve provides sensitive pressure control and will operate all types of brakes without any adjustment. Proper choice of pedal lever and attachment will permit the valve to serve a range of brake operating pressures (maximum working) from 175 psi to 750 psi. Such a valve is normally used in aircraft over 12,000 lbs. gross weight.

## Clemson Introduces New Hacksaw Frame

A cam-action lever lock sets up and releases the blade in a new type of hacksaw frame manufactured by the Clemson Bros., Inc., of Middletown, N. Y., makers of Star Hack Saw Blades. Loose blade studs and threaded tension devices have been completely eliminated with the result that blades can be replaced, according to the manufacturer.



The frame, shown here, is made of heat treated spring steel which provides unusually high rigidity in the frame itself and exceptional tension in the blade. A single pivot permits use with 8", 10" or 12" blades. The handle, either Straight, Star No. 30, or Pistol Grip, Star No. 20 is a patented design of heat-resistant Tenite.

## GE Announces Dust-Tight Relay

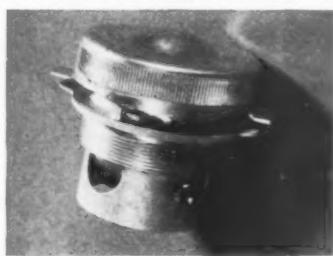
General Electric Company announces a new dust-tight relay especially designed for aircraft application requiring high current-carrying capacity without sacrifice of compactness and light weight.

The unit is a solenoid operated device with the normally open contacts rated at ten amperes direct current. These contacts will make or break 30 amperes up to 40,000 feet. The coil, contacts and plunger are enclosed in a dust-tight housing and the unit is corrosion-proof, meeting 200 hour salt spray tests.

The relay can be furnished in a single pole, single circuit form with normally open contacts or in a single pole, two circuit form with one normally open and one normally closed contact. The operating coil is available for either 12 or 24 v d-c operation.

## Aircraft Tank Cap

Production simplicity and savings in critical material are the featured claims for a new aircraft gas tank cap assembly introduced by Poulsen & Nardon, Inc., Los Angeles manufacturer of stamped parts for the aircraft industry. Primary dif-



ference between the new and conventional cap is in construction methods; interchangeability is assured.

Approximately 30% of the labor required has been eliminated, according to Carl Nardon, president. Deep-drawing replaces the use of tubular stock and many of the previous welding operations are accomplished by stamping.

## Auxiliary Relay

A new, instantaneous auxiliary relay, Type HMA, designed to meet the specifications of Army, Navy, Air Corps is announced by General Electric. It weighs nine ounces and is  $1\frac{1}{8}$ " by  $2\frac{3}{4}$ " by  $2\frac{9}{16}$ " with cover. The base, cover and moving contact supports are of one-piece molded Textolite. The relay is available in the following make-up: double-pole, double-throw with single-break contacts; single-pole, double-throw with double-break contacts; single-pole and double-throw with double-break contacts brought out to a terminal. Front or back connection may be had; with or without cover. Silver to silver contacts, self-aligning, will interrupt one ampere at 125 volts d-c inductive load.

## THE TOMORROW YOU'RE FIGHTING FOR:



## TO HONG KONG \$156\*

At yesterday's excursion fares! You'll be able to take a week off and see the new Hong Kong... 30 hours away... or, Moscow only 15 hours... over the top of the world.

Tomorrow, up in the stratosphere, you'll fly over ice fields as nonchalantly as you now fly over corn fields. Tomorrow the world will be yours... with no little white fence around it. You... and your world 'round neighbors will be free to go where and when you please... after we've buried the axis.

But, "we must eat our spinach before we can have the dessert!" We must work and fight... for our freedom. Whether it's behind a "shooting" gun, or a rivet gun, each of us now has a battle station.

Western Air Lines' battle station is twofold: (1) flying military cargo planes for the Air Transport Command; (2) operating airline schedules for essential civilian travel. Services of supply... for the fighting front and the production front.

\*7800 miles from Los Angeles, Omaha or Milwaukee—at a possible rate of 2 cents a mile, based on present air developments.



General Offices: Lockheed Air Terminal, Burbank, California

# Porter Recommendations to NWLB

## Call For West Coast Wage Raises

By CONRAD CAMPBELL

THE long awaited report from Paul R. Porter, WPB presiding officer of the Aircraft Wage Stabilization Conference on the West Coast, has been completed and was presented to the National War Labor Board just prior to the scheduled hearing date in Washington in early January. It recommends a series of increases for southern California firms, and another scale for Boeing.

Prepared and submitted in four divisions, each section contained his recommendations, an analysis of the recommendations, and a suggested directive to carry them out.

The first division covered his opinions and suggestions for stabilization of wages for eight Southern California aircraft manufacturers: Consolidated, Douglas, Lockheed, North American, Northrop, Ryan, Vega & Vultee. Wage increases averaging six and three quarters cents an hour for factory employees were recommended.

### Eliminate Inequalities

Reasons given by Porter for the suggested raise in rates were to provide means of eliminating inequalities within the rate structure of the Industry and to set up a uniform classification system for the first time. According to his report, the increases would have the effect of narrowing the differential between aircraft and the West Coast shipbuilding industry.

For factory beginners in these plants, Porter recommended that all with less than four months' experience receive a minimum increase of 5c an hour and that another 5c step be added to the current three-step beginners' promotion system. This would increase beginners' rates to 80c after 16 weeks, in place of the present plan of ending the increases at 12 weeks' time, with 75c.

### Automatic Advances

Other proposals of the report would provide for automatic advances from the minimum to the maximum rate in each group by the amount of 5c each 13 weeks. The prevailing practice of in-grade increases on an individual basis, intended to be for merit, were claimed by Porter to be applied unevenly and had thus become a source of dissatisfaction. In his opinion, labor turnover would be substantially reduced if employees were to know with reasonable assurance what rate they might expect at definite periods.

The report further recommended that the increases be made retroactive to employees who had been on company payrolls on July 6,

1942, the convening date of the conference at Los Angeles. This retroactive plan would also be extended to employees who had been inducted since that date. Employees, however, who had disregarded requests of the companies, unions, and the government to remain on the job pending the decision, and who "had shopped around", would not receive retroactive pay.

### Effects

The practical effects of the recommendations relating to wages may be summarized as follows:

(1) All employees, other than beginners with less than four months experience, would receive an increase of 5c an hour or more.

(2) Excluding beginners, 5% of all employees would receive an increase of approximately 7½c an hour.

(3) Excluding beginners, 23% of all employees would receive an increase of approximately 10c an hour.

(4) Excluding beginners, 3% of all employees would receive an increase of approximately 12½c an hour.

(5) Excluding beginners, 10% of all employees would receive an increase of approximately 15c an hour.

(6) Excluding beginners, 7% of all employees would receive an increase exceeding 15c an hour.

(7) The present starting rate of 60c an hour for inexperienced beginners, advancing to 65c at the end of four weeks, 70c at the end of

eight weeks, and 75c at the end of 12 weeks, would remain unchanged, except that a fourth automatic increase to 80c at the end of 16 weeks would be established.

(8) The minimum rate for any employee with four months experience would be 80c an hour.

(9) The average increase for employees with four months experience would be 8½c an hour; computed on the basis of all employees, including beginners, the average increase would be 6¾c.

(10) A uniform plan of advancement would assure, by the end of six months from the date of the Board's Directive Order, approximately 86% of all workers, other than beginners, an hourly wage of 95c or more.

The proposed classification system is to be made subject to review by collective bargaining procedure and final approval by a Pacific Coast Aircraft Commission to be established by NWLB. Porter recommended that this Commission be composed of two representatives from management, two from labor and one from the public.

### Boeing Recommendations

A separate report was filed by Porter concerning employees of Boeing Aircraft Co. plants at Seattle and Renton, Wash. These workers would be awarded somewhat larger increases than those in Southern California, Porter said, due to the fact that a generally higher wage level prevails in the Pacific Northwest. Since his re-

port was filed, however, labor organizations in California have been actively inciting workers there to refuse to acknowledge any rate for a difference in rates.

For Boeing workers, the report suggests a seven-cent increase in the basic hourly wage rate of factory employees, having more than 16 weeks' experience, and a 10% increase in the hourly starting rate.

Under this plan, beginners would start at 65c an hour and their pay would be automatically increased every four weeks until it reached 85c after 16 weeks. The present rate provides for an increase to 70c after the first six months and another increase of 7½c after six months.

A similar job evaluation plan and classification schedule to that proposed for the Southern California aircraft industry was also advised. If they adopt this plan within six months, he suggested a wage scale in which the minimum would be 5c an hour higher than Southern California in all but the top grade. Maximum rates would be the same as in all Southern California grades except the lowest, which would be 5c higher.

The result would be that Boeing's rate ranges would be narrowed; the long run effect would be to wipe out the differential between the two sections for all employees except beginners and those in the lowest grade, Porter said.

### Differentials

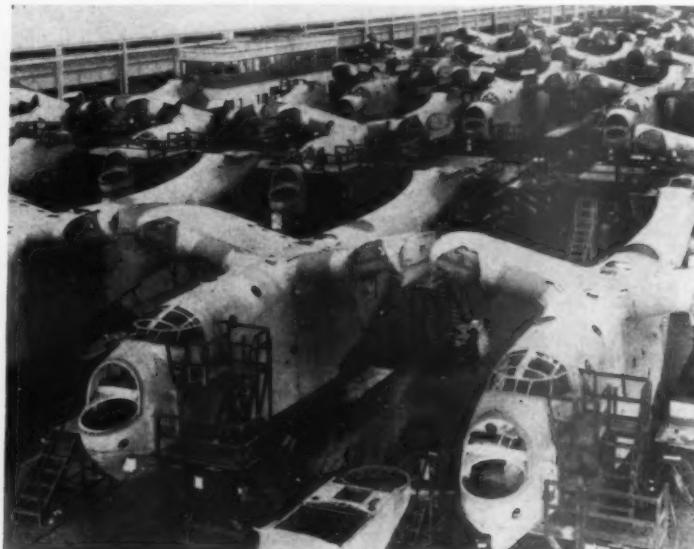
Part III of Porter's report contains recommendations for overtime, differentials, vacations and leave, hours of work, bonus workers entering the armed forces for factory employees and office, technical and supervisory employees who are eligible for overtime under the Walsh-Healy and Fair Labor Standards Act. It applied to all plants in both California and Washington.

### Clerical and Technical

Office, technical and supervisory employees' wage rate changes recommended by Porter in the fourth part of his report. Such employees in California plants would receive as beginners an increase of 5c an hour in the basic rate after 16 weeks receive a basic rate of 5c an hour higher than the currently established rate for all employees of equal qualifications and experience. For Boeing plant workers, the recommendation is for an increase of 7c an hour.

In addition a job evaluation program is suggested for California plants "as expeditiously as possible and within a period not exceeding three months from date of this directive order." A similar job evaluation plan advised for the plants is to be established within 60 days of the determination of such a program for California.

All wage increases in both California and Washington are to be retroactive to July 6, 1942, under the same conditions outlined in Part 1 of the report. In a further recommendation, Porter suggested that such retroactive increases be paid in War Bonds.

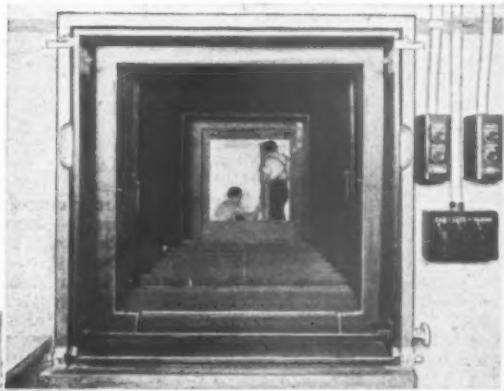


**Sub Hunters:** Glenn L. Martin PBM-3 Mariner aircraft are shown as they move down the final assembly line. These 24-ton ships are used to hunt submarines preying on Allied shipping. This is the first photo of the Mariner production line released by the Navy.

# These Martin Firsts help make U.S. AIRCRAFT SECOND TO NONE!



**FIRST** all-plastic aircraft nose, used on the Martin B-26, giving bombardier full visibility and absorbing recoil of forward gun. Martin was working on plastic noses and other parts as far back as 1921. Today some Martin types contain 400 plastic parts.



**FIRST** to develop photo-layout method, utilizing giant camera. Through this method, scale photos are reproduced directly on sheet metal, thus speeding production. Moreover, drawings may be scaled up or down swiftly, accurately.



**FIRST** U. S. power-operated gun turrets, giving our bombers strong protection against enemy interceptors. Martin manufactures these turrets not only for Martin bombers but also for many other types of American aircraft.



**FIRST** U. S. self-sealing fuel tank. Martin Mareng tanks are now standard equipment on many American aircraft. Martin experiments on self-sealing fuel tanks date from 1919, during which period over 285 different materials were tested.

These are only a few Martin "firsts." Some are still close-guarded military developments, while numerous others, individually minor but collectively important, are in use throughout the aviation industry. But Martin engineers are never satisfied. In scores of diverse fields, work goes on to give America even mightier planes for today's aerial fights, tomorrow's peacetime flights.

# Martin AIRCRAFT

Builders of Dependable Aircraft Since 1909



# GMC Starts Grumman Production; Learns Mass Output is Impossible

FIVE General Motors Corp. plants are now in production of Grumman fighters and torpedo planes, making the Eastern Aircraft Division the first unit in the automobile industry to convert to complete airplane production. L. C. Goad, division general manager, has announced.

All five plants were manufacturing auto parts or assembling cars less than a year ago.

In the 11 months of conversion, GMC's study of aircraft manufacturing methods have resulted in a new respect for the nation's old-line aviation industry, Goad revealed at a special event marking the start of operations.

"If we have learned anything from our trials, we have learned that mass production is a misnomer as it is applied to aircraft building," he said. "We need a new phrase to describe it—fluid production perhaps, or volume production . . . Until the time comes when we can standardize design and reduce the importance of weight, we cannot hope to produce planes by the manufacturing methods employed in production of automobiles.

## Lauds Plane Mfrs.

"Candor compels me to admit that I am a 'Johnny-come-lately' to the field of aircraft manufacture. We have learned something and we've come to have a high regard for the men in the aircraft industry . . . I think it is safe to say we cannot now and probably never will see during this war mass production of aircraft as we knew it in the automotive industry. The problems of fluid design in aircraft are, I believe, one point where the automobile industry—in the beginning—had no real appreciation of what was involved in the manufacture of airplanes.

"Every piece of an automobile must be designed to avoid too many troublesome operations. This can't always be done in aircraft. Unlike the automobile, everything in the airplane, including the skin, is a structural member working right up to its elastic limit. Problems of stress and weight are paramount, as are problems of smoothness of design and shape.

"To fabricate such parts many machine tools and dies are needed. Now, anyone connected with an automotive plant could not help but be impressed with the crudeness of most airplane tooling. The truth is that if it had been feasible or practical to use the type of dies we used, for instance, in making fenders, the aircraft industry would have had them. They didn't use them because of changes and because they cost a hell of a lot of money with no chance to amortize

them even on wartime production volume. The time required to make automotive dies is so great that its adaptation to aircraft would leave the companies doing nothing but making tools instead of airplanes and by the time they had finished, the tools would, in many cases be obsolete.

## Tooling Factor

"There is also another tooling factor where the difference between aircraft and automotive construction is considerable. As you know, automotive tooling consisted largely of specialized machines built to do a single job. For example, we might have a machine to drill all the holes in a cylinder block at one time. Perhaps it cost \$100,000. If you changed one hole in that particular piece the machine became obsolete. But we never worried about it because we could save enough money in one model year through its economy of operation to pay for it and still regard it as a profitable investment. If we changed it the next year we paid the price and the premium, and it was profitable to do so from the standpoint of what it accomplished on a mass production scale.

"But in the aircraft industry we must use standard or universal machines capable of doing more than one job or at least capable of meeting fluctuating specifications. If you build a special machine you can run only that one part. Supposing you figure on only 10 a day of your product. If you were equipped with special machines, most of them would be standing idle. With high production quantities, as with the automobile, special equipment is running all day long on one thing. But with lesser production, and in the case of air-

planes, there isn't a part that stays set up. You must run parts in job lots, put them in the stockrooms and the only way this can be done is to have machinery that can apply generally.

"Some of these facts I learned before we really got started by visiting aircraft plants but the great majority of our information came from the 'sink or swim' method with which we were introduced to the manufacture of aircraft. We went through all kinds of hell in the beginning—and later too—but we did get into production. Perhaps we made some false starts and struck down some blind alleys in the process of learning. But we are building airplanes nonetheless and we are building them sooner, I think I can reveal, than the Navy ever thought we would.

"The automobile industry can make a great contribution to the aircraft industry. We've learned to do an excellent job of controlling our materials and planning our schedules. We know how to break every job down into the most economical components for manufacturing and to establish continuity and balance in production operations that result in the least waste of the operator's efforts. I'm sure we can contribute to the use of new materials and, as new designs come along, the close relationship of automotive and aircraft engineers will result in airplane designs that will be easier and more economical to manufacture and assemble.

"I am sure we are over the hump, and that from here on there will be a better understanding. The two industries will trade their tricks and take full advantage of the specialized 'know how' of both industries."

In about 11 months Eastern Aircraft retooled the five General Motors automotive plants the division absorbed upon its formation Jan. 21, 1942, and it now manufacturing its own parts assembly into the completed plane.

The new Division was formed to utilize some 60 acres of floor space in five General Motors plants in the eastern seaboard. Two were formerly Fisher Body plants in Baltimore, Md., and Tarrytown, N. Y.; one was an automobile assembly plant at Linden, N. J., and the other was a Delco-Remy battery plant at Bloomfield, N. J., and the fifth manufactured automotive hardware at Trenton, N. J. In the five plants, none of which was originally designed for aircraft manufacture, Wildcat fighters (FM-1) and Avenger torpedo bombers (TBM-1) are taking shape at the hands of thousands of workers, less than 5% of whom had previous aircraft building experience.

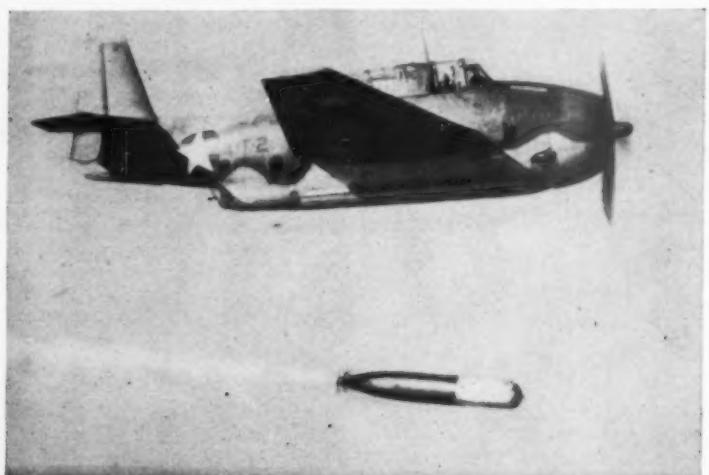
"To build this new manufacturing project on the foundations of an older industry where the techniques were totally dissimilar, it has been necessary to rip out all the automotive equipment, redesign many sections of the five plants and engineer new processes that will take advantage, where possible, of the mass production experience of the automobile days," the company said in its first announcement. "It is equally important that new wood-working and fixtures be designed and built, and that new workers be found and trained to take their place on employment rolls now more than 100% greater than the peacetime peak of the five plants, and still climbing."

## Took 3 Months

"The physical conversion of automobile plants took about three months, during which time more than 25,000,000 pounds of tools, machines, fixtures and equipment were removed in the process of stripping the plants to the bare walls. Only a small percentage of this equipment itself to immediate convenience for use in aircraft building.

"Then came the problem of fitting up to fabricate the 40,000 separate parts for the two airplanes. Because most airplanes before the war were more or less custom-built by men with long experience in the industry, specific detailed information never before had been compiled in complete form. But now it had to be for the benefit of the automobile people forming the nucleus of employment and the countless inexperienced people gathered around them. Automobile experience on process engineering also had to undergo radical change to build and operate machines that take into account the fluid design of aircraft. Today the best aircraft production methods are being blended successfully with the automotive 'know how' and the sense of flow that used to complete an automobile every 60 seconds on the assembly lines at the Linden plant.

"Meanwhile, to get into production as quickly as possible, plane (Turn to page 58)



Official U. S. Navy Photo  
Tin Fish Launched: Skimming low over the water, this Navy Grumman TBF-1 Avenger, torpedo bomber, has just cut loose its lethal cargo.

# Waco's Glider Production For Army Reaches Peak

Although several major manufacturers have discontinued manufacturing AAF gliders, Waco Aircraft Co. reports that it is turning out "in amazing quantities." Two weeks ago a giant cargo ship towing one more gliders from factory to port is fast becoming a common sight in many American towns," company says.

The company was asked in June to design and fabricate two experimental glider models of the N. J. In the which Waco CPTP trainer type. The aircraft manufacturers (PM) do not know the end of the year and mass output, at the capacity of workers, the Ohio plant, plus the aid of had previous companies.

The Waco CG-4A 15-place glider is a natural for production," says. "The fuselage is fabricated entirely of steel tubing, fabric it has been. The wings are of wood all the construction: box spars, spruce design may be plywood covered. There are intricate parts or complicated that were assembled connected with the possible. The sub-contractors experience in the production of various sections of the glider are former furniture manufacturers, piano factories, new wood-working shops, cabinet and builders and others that the average found could hardly visualize as manufacturers of one of America's greatest and most important peak weapons.

Buildings in sections for simplification of transportation and assembly, various parts of the glider can be manufactured by smaller sub-contractors all over the country and assembled at any one base. Being time necessarily light in construction, transportation and manpower for component assembly are elementary problems. If damaged in flight or on the ground, another section simply replaces the damaged one. Of course the natural method of transportation is simply to tow them away from the point of fabrication. This is the general practice where the airplane unit is manufactured at one point.

For the first time, the company in the new tactics which have been found successful in making more difficult for enemy aircraft to knock down.

"While strictly an offensive instrument, the troop glider isn't exactly duck soup for enemy fighters as targets to be picked off leisure," Waco says. "Since the XCG-3 nine-place glider was introduced, this air weapon has been object of constant research and testing experiments. A way has been found to make the glider an exceedingly difficult target. When an enemy fighter attacks a glider unless he has delivered the auto-attacks and possesses the good fortune to have been able to away under his own power—he due for a rather interesting, and possibly fatal, few minutes of entertainment."

The gliders can cut loose from train instantly, kick up the

spoilers atop the wings and lose three or four hundred feet of altitude before the fighter can get the craft anywhere near his sights. From that point on, it is simply a matter of an almost vertical dive, turning, twisting and performing such unsportsmanlike maneuvers as are necessary to become a difficult target; all of which causes the fighter pilot no end of chagrin. The whole glider train can be on the ground in a matter of seconds and the only effective attack from the fighter is strafing.

"And that, incidentally, may be risky business since the troops on board the glider have never been taught to become immobile targets. They are fully equipped with the necessary articles of war. A strafing fighter is fish in the rain barrel for freshly landed glider troops, so don't feel too sorry for the glider troopers. They don't feel sorry for themselves and they wouldn't trade places with the fighter pilots.

"Experiments have proved the feasibility of glider pick-up from a cargo ship flying overhead. This makes possible the salvaging of gliders from fields that otherwise would prove too limited in area or too rough in terrain to permit towing off by the tow ship. In a matter of minutes the rounded glider can be placed in take-off position and picked up by a ship overhead flying at 100 mph or more. This is an adaptation of the air mail pick-up methods now executed as a routine service daily."

## Rohr's Deliveries Show Big Increase

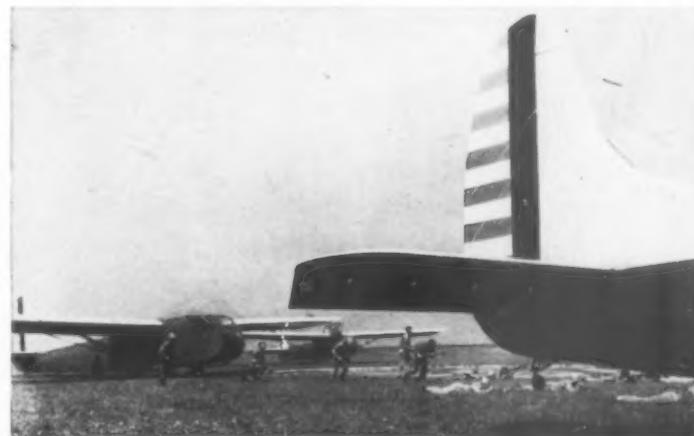
"During the fiscal year just concluded, the value of our deliveries was more than eight times that of the previous fiscal year," Rohr Aircraft Corp., Chula Vista, Cal., reveals in report to stockholders for fiscal year ended July 31, 1942, showing total current assets as \$5,325,517.35.

Other current assets include inventories, \$1,802,240.46 and cash, \$2,054,902.53. Total assets amount to \$6,398,787.22, including \$825,464.84 for buildings and equipment, after reserves for amortization.

Rohr's balance sheet shows total current liabilities as \$3,860,217.80, including \$2,978,000 for estimated Federal income, excess-profits, and capital stock taxes. Paid-in surplus was listed as \$340,200, and earned surplus, \$1,020,168.33.

## School Honored

Formal presentation of the efficiency banner of the first district of the U. S. AAF Technical Training Command was made to the Academy of Aeronautics, Inc., N. Y. Municipal Airport at a recent ceremony, according to Academy announcement. Award was for operating the most efficient civilian mechanics school in the district.



Demonstration: Here's how air-borne troops will land from Waco CG-4A 15-place gliders in enemy territory.



Photo by Aeron.

British Model: Huge transport gliders like the one above are being used by the Royal Air Force's airborne divisions, now reported in use in the African campaign.

## Manufacturing Digest

GLENN L. MARTIN Co., Baltimore, Md., reports a reduction of 40% since last May in daily absentee average. Similarly, its week-end absentee average has dropped recently. On Nov. 29, 1942, it claims this rate was 17% less than in May; on Dec. 6, rate was 16% less than Nov. 29, and on Dec. 13 there was a further drop of 10%.

REPUBLIC AVIATION Corp., Farmingdale, L. I., N. Y., has announced a "distribution of adjusted compensation" totaling more than \$500,000 was made to its employees on Dec. 23, 1942. Distribution was at the rate of 3 1/2% of a year's base salary, or in excess of a week's base wages, for those who had been with the company for a year. Those who had worked shorter periods received proportionate amounts.

SOLAR AIRCRAFT Co., San Diego, Cal., has announced it received the Army-Navy "E" Award in ceremonies held Nov. 25, 1942.

WRIGHT AERONAUTICAL Corp., New York, N. Y., advises it plans to hire 20,000 additional women for its New Jersey plants,

both to fill jobs in new plants, and to replace draftees. They will be placed in such capacities as: machine tool operators of all kinds, assembly line workers, engine packers, cooks and maintenance workers. Those hired will be sent to vocational school for two weeks before starting with Wright.

PULLMAN-STANDARD CAR MFG. Co., Chicago, Ill., has received new war contracts for expanded production of wings and tail assemblies for two and four motor cargo planes, according to press report.

BENDIX AVIATION, Ltd., North Hollywood, Cal., reports it has established an independent radio and electronic research department for the development of new radio systems. Delmar Wright is director. Purpose is "to explore advanced uses for radio and electronics."

PRODUCTION AWARDS: Among companies recently selected to receive the Army-Navy Production Award were: Buffalo Forge Co.; Adams and Westlake Co.; Shell Oil Co. Inc.; U. S. Rubber Co.; Austin Co.; B G Corp.; Aro Equipment Corp.; General Motors Corp.

## HERE'S HOW TO SAVE TIME ON THE TOUGH RIVETING JOBS!

### CHERRY BLIND RIVETS

need no bucking bar, have  
positive mechanical action

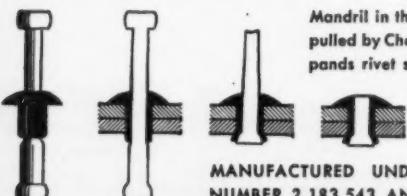
Cherry Blind Rivets are made to save time in the hard-to-get-at spots. The riveting is done by one man from one side of the work. There is no time-consuming reaching through inaccessible structures because no bucking bar is needed. The self-plugging Cherry Rivets can be applied at the rate of 800 per hour... the hollow type at 1600 per hour.

**HOW HEAD IS FORMED**—The Cherry Rivet is a true rivet, made of aluminum alloy, through which passes a double-headed mandrel. Riveting is done with either a hand-operated or power gun which pulls on the mandrel and pushes on the rivet head. The mandrel forms a tulip head on the blind side, expands the shank and permanently plugs the rivet.

**NO CRITICAL TOLERANCES**—The positive mechanical action of the Cherry Rivet gives satisfactory performance with reasonable tolerances in grip length and hole size. This characteristic makes them highly practical for field service and repair work as well as for new aircraft structures. Complete instructions on the use of Cherry Rivets will be furnished on request.

Mandrel in the self-plugging Cherry Rivet, when pulled by Cherry Rivet Gun, forms tulip head, expands rivet shank, permanently plugs the rivet and then breaks, releasing gun. Mandrel is trimmed flush.

MANUFACTURED UNDER UNITED STATES PATENT NUMBER 2,183,543 AND OTHER PATENTS PENDING



The G-15 Power Gun, shown here, is the most efficient tool for Cherry Rivet application. The G-10 Hand Gun may be used when compressed air is not available.

## On the Labor Front

### AERO SUPPLY MANUFACTURING CO., Corry, Pa.

Company is directed by NLRB to hold election for production and maintenance employees to vote for USW-CIO, IAM-AFL, or neither.

### BENDIX AVIATION CORP., Owosso, Mich.

UWA-CIO is certified by NLRB as bargaining agent.

### BOEING AIRCRAFT CO., Seattle, Wash.

Report of Paul Porter, WPB presiding officer of the Wage Stabilization Conference, recommended a 7c increase in the basic hourly rate of workers with more than 16 weeks experience, and a 2½c increase in the hourly starting rate. Before the decision became known, Boeing workers pledged that they would abide by their no-strike agreement if their wage demands were turned down.

### BOHN ALUMINUM & BRASS CORP., Detroit, Mich.

After a series of unauthorized walkouts, called in protest against delayed NLRB in approving a company-approved pay raise, workers were told by NLRB that they would not consider their case until they stopped striking. Army authorities advised the company that they will take action against five or six persons blamed for the wildcat strikes.

### BREWSTER AERONAUTICAL CORP., Long Island City, N. Y.

NWLB approved a panel report calling for a reclassification of employees Jan. 25. Reclassified workers will receive the proper rate for that classification, retroactive to Sept. 12, or to their date of hiring, whichever is later. Board ordered the wage rates established by the September 1 evaluation to be put into effect immediately and made retroactive as of Sept. 12, 1942, as agreed by the parties. The hiring rate will be increased 2c to 72c becoming 72c after two months and 77c after four months, retroactive Sept. 12. This covers employees in plants at Long Island City, N. Y., New N. J., and Johnsville, Pa. Prior to decision announcement, workers saw a slowdown.

### BRIGGS MANUFACTURING CO., Detroit, Mich.

Employees were granted wage increases of from 4c to 10c an hour by NWLB. Board unanimously refused to order reinstatement of seven workers who approved a panel's attack on the secretary of the Mechanics' Education Society of America for calling a strike at the plant, followed by a sympathetic strike at 18 other Detroit war plants.

### CHRYSLER CORP., Detroit, Mich.

Company has asked NWLB and Bureau of Internal Revenue to approve increases of \$10 to \$18 a month for employees who now receive \$350 or less a month who are not represented by a certified labor organization. Before the scheduled public hearing of its case pending before NWLB, union workers seeking a new agreement, the company advised the Board it opposed writing union shop, checklist and compulsory arbitration provisions into its contract with UAW-CIO and asked the Board to extend the present agreement with the union for the war's duration.

### CONSOLIDATED AIRCRAFT CORP., San Diego, Cal.

NLRB directed company to hold an election for all employees at Camp Kearny to vote for or against IAM-AFL.

### CURTISS-WRIGHT CORP.

Curtiss Propeller Division plant guards at Clifton and Caldwell, N. J., were directed by Federal Labor Union-AFL as bargaining representative. Company is ordered by NWLB to pay a 60c hourly starting wage, with increases of 5c a month until 75c is reached at these plants and at Beaver, Pa. Maintenance of membership and dues check-off were directed by the panels considering the case, which also recommended that NWLB consider an aircraft wage stabilization for the East Coast industry.

### DOUGLAS AIRCRAFT CO.

Disputes at New York and Oklahoma have been marked settled by the U. S. Conciliation Service.

### FADA RADIO & ELECTRIC CO., INC., Long Island City, N. Y.

Secretary Perkins has certified a wage controversy to NWLB.

### FAIRCHILD AIRCRAFT DIVISION, Hagerstown, Md.

Company announces its Hagerstown plants have begun a six-day work schedule, upon agreement of workers.

### FIRESTONE TIRE & RUBBER CO., Akron, O.

Dispute certified to NWLB.

### GENERAL MOTORS CORP.

Eastern Aircraft Division, Linden, N. J., is advised by NLRB of certification of UAW-CIO as union representatives for employees.

### HICKOK ELECTRICAL INSTRUMENT CO., Cleveland, O.

NWLB has approved a wage agreement providing a general wage increase of 7c an hour.

### NEW DEPARTURE DIVISION, GMC.

NWLB advises company that workers are to receive wage increases of 6c an hour and paid vacations, under a wage order similar to that previously issued for 95 other GMC plants.

### NORTH AMERICAN AVIATION, INC. OF KANSAS, Kansas City, Kan.

NLRB certifies UAW-CIO as bargaining agent for employees.

### PACKARD MOTOR CAR CO., Detroit, Mich.

NWLB has approved agreement for increase of 4c an hour for 20,000 hourly rated employees and additional sums for five classifications. All with one to five years' seniority will receive \$45 in lieu of 1943 vacations and those with five years or more will receive \$90.

### STANDARD AIRCRAFT PRODUCTS, INC., Dayton, O.

A wage agreement providing for the adjustment of the minimum, quality and maximum rates for all occupations, including adjustments in the wages of employees not covered by the contract, has been approved.

### TENNESSEE AIRCRAFT, INC., Nashville, Tenn.

NLRB advised company that it has certified IAM-AFL as representative of employees.

### THOMPSON PRODUCTS, INC., Detroit, Mich.

Striking employees ordered by NWLB to return to work at once. The work stoppage was caused by a dispute between UAW-CIO and the Society of Tool and Die Craftsmen, an independent union which has been certified by NLRB as bargaining agent. UAW, however, is attempting to obtain bargaining rights.

UNIVERSAL MOULDED PRODUCTS CORP., Bristol Aircraft Division, Bristol, Tenn. Company is directed to hold election among maintenance and production employees to vote for or against IAM-AFL.

### WRIGHT AERONAUTICAL CORP., Lockheed, O.

Company is ordered by NLRB to withdraw all recognition from and completely disestablish Aeronautical Employees Association as representative of its employees.

# Cherry Rivet

Company

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## Curtiss-Wright Constructs New Research Lab.

"One of the largest and most completely equipped research laboratories in the nation," will soon be completed by Curtiss-Wright Corp., Airplane Division, Buffalo, N. Y.

It will be a "clearing house and a testing ground for all the ideas and designs conceived by our workers whether they build planes or project them on paper," announcement explains.

Central feature of the new laboratory will be the wind tunnel, identical with the tunnel being constructed on the West Coast by the California Institute of Technology, and financed by Consolidated Aircraft Corp., Douglas Aircraft Co., Inc., Lockheed Aircraft Corp., and North American Aviation Inc., described in *AMERICAN AVIATION*, Jan. 1. The Buffalo tunnel, which will cost \$2,100,000, will be made available to Eastern aircraft manufacturers through the facilities of the Aircraft War Production Council, East Coast, Inc.

Among other important features is the altitude chamber. It is described as the "largest ever designed" and will accommodate single-place fuselages and reproduce actual dive and climb conditions. Already the developments department is working on plans for armament research, material substitution for aircraft equipment, miscellaneous production process developments, post-war products and miscellaneous research. Projects have been completed for the Army in the develop-

## Bill Stout Joins Consolidated

William B. Stout, well-known Detroit inventor and engineer, has been engaged to work full-time for Consolidated Aircraft, San Diego, Cal., according to company announcement.

Stout's organization, known as the Stout Engineering Laboratory, will become the Stout Research Division of Consolidated. It will continue its creative research work in improving aircraft allied products and in developing new product ideas.

It is understood Stout will spend considerable time in San Diego, that his headquarters will be in Dearborn, present location of laboratories. No details as to specific projects he will be engaged on can be revealed at this time.

ment of bore-sighting methods for aircraft guns, as well as in aids to better gun performance.

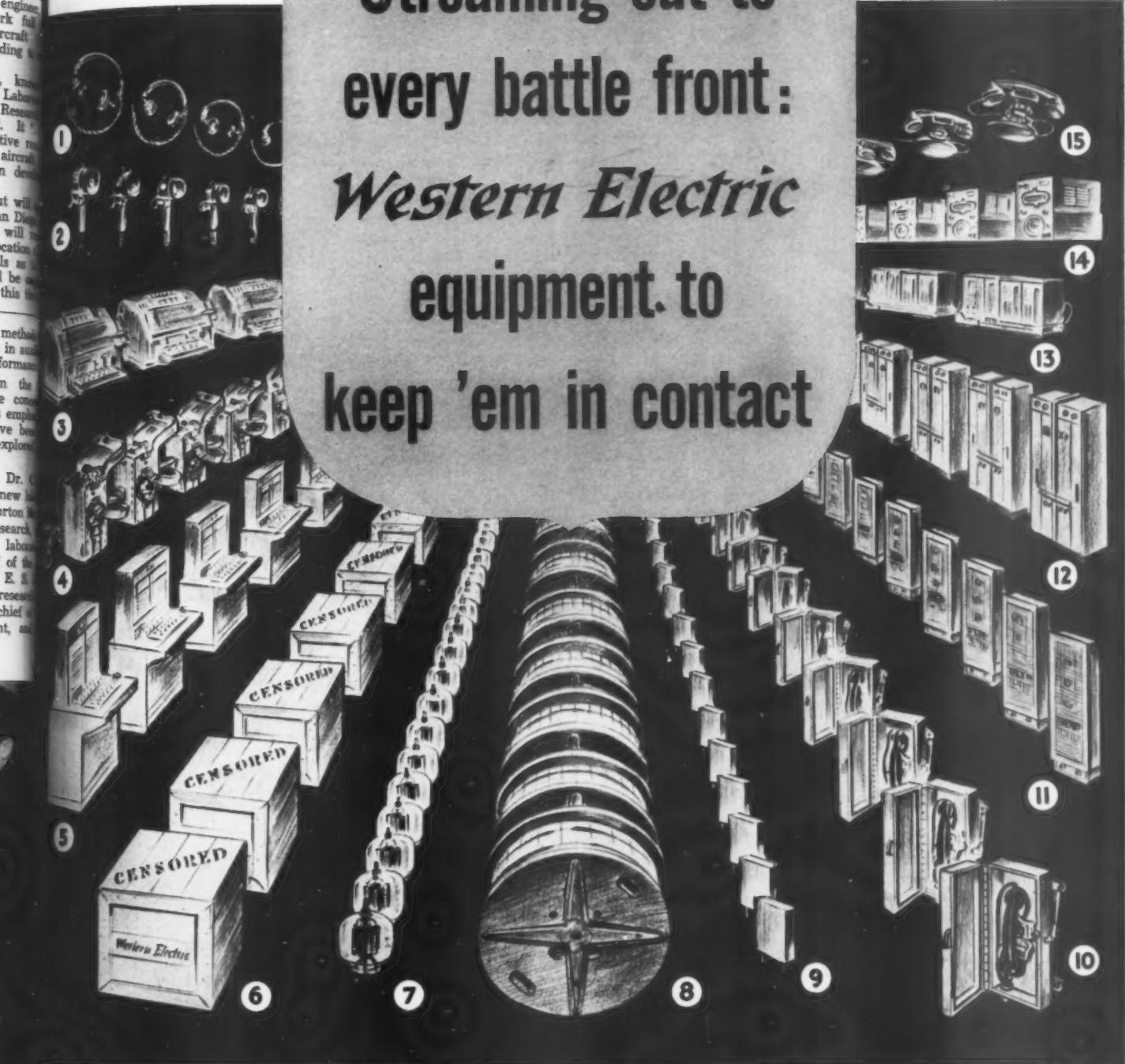
Although projects in the immediate future will be concerned mostly with war, it was emphasized that "no limitations have been placed on the fields to be explored in future developments."

Besides its director, Dr. C. C. Furnas, the staff of the new laboratory will include: Dr. Norton L. Moore, chief of aerodynamics research, helped to design the laboratory; Peter F. Rossman, chief of developments department; E. S. Jenkins, chief of materials research; G. Trimbach, assistant chief of developments department, and E. Voisin, manager.



**Supervise New Lab:** Curtiss-Wright Corp.'s Airplane Division has named a group of air experts to supervise the program of its new research laboratory at Buffalo. Seated, left to right, are Dr. Norton L. Moore, chief of aerodynamics research and co-designer of the new \$2,100,000 wind tunnel; Dr. C. C. Furnas, formerly of Yale University, newly-appointed director of the lab; W. E. Voisin, manager of the lab. Standing, left to right, are C. G. Trimbach, assistant chief of developments; E. S. Jenkins, chief of materials and structures, and Peter F. Rossman, chief of developments department.

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- 15 TELEPHONES for military and industrial communications.

## MANUFACTURING

### Financial Briefs

REYNOLDS METALS Co., Richmond, Va., declared a dividend of 50c per share, common, on Dec. 11, 1942, its first distribution since Dec. 20, 1940.

JACOBS AIRCRAFT ENGINE Co., Pottstown, Pa., directors declared dividend of 30c on each of 618,546 shares of capital stock, which was payable Dec. 29 to holders of record Dec. 18, 1942.

NATIONAL AIRLINES, Inc., Jacksonville, Fla., reports for the four months ended Oct. 30, 1942, net income of \$82,589, equal to 31c each on 270,000 common shares.

HAYES INDUSTRIES, Inc., Jackson, Mich., has declared dividend of 15c a share, common, payable Jan. 25.

BORG-WARNER Corp., Chicago, Ill., directors have declared dividend of 40c a share, common, which was payable Jan. 2 to holders of record Dec. 22, 1942.

BUTLER MANUFACTURING Co., Kansas City, Mo., reports for the year ended Sept. 30, 1942, net income of \$497,381, equal to \$12.97 each on 35,000 shares, common, compared with \$342,559, or \$8.54 a share for the previous year.

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### AMERICAN AVIATION DAILY

American Building

Washington, D. C.

### Bowman Elected NATA President

Leslie H. Bowman, Ft. Worth, Tex., was elected president of the National Aviation Training Association at the third annual convention held December 9 and 10, 1942 at Kansas City. He succeeded William A. Ong of Kansas City, who had served two years. Moving up from the first vice-president, Bowman was succeeded in that office by Col. Roscoe Turner, Indianapolis, Ind., second vice-president. In the Turner vacancy the delegates placed F. Leslie Marsden, Buffalo, N. Y.

Representatives on the Board of Governors, elected previously by the Regions, were announced as follows: First, Wiley M. Post, Jr., Allentown, Pa.; Second, W. F. Underwood, Atlanta, Ga.; Third, Col. Turner; Fourth, Mr. Bowman; Fifth, Mr. Ong; Sixth, Herbert W. Hartley, Los Angeles, Cal., acting; Seventh, H. A. Poulin, Yakima, Wash.

The association voted to dispense with board meetings as impractical in war time, placing all responsibility and authority in an executive committee. Named on this committee were: Mr. Bowman, chairman, Col. Turner and E. W. Wiggin, a flight training operator who has schools in Boston, Mass., Providence, R. I., and Columbia, Mo., and who is partner in an Army contract school at Camden, Ark. Two standing committee chairmanships were announced—Ong on manufacturers and Marsden on insurance.

The convention instructed the executive secretary, C. R. Mooney of Kansas City, to expand the head-



Turner

Marsden

quarters office in Washington and to establish a staff of sufficient size to conduct the increased activities clearing through N.A.T.A. The officers were directed to devote their first efforts to such problems as clarifying the status of flight instructors, mechanics and other key personnel at aviation training institutions under the War Manpower Commission; obtaining the necessary repair parts and materials to return airplanes to the air, grounded now for lack of essential items.

Attendance at the convention exceeded 250. Principal speakers included the Hon. William A. M.

### Sikorsky Receives Reed Award IAS Fellow

Institute of the Aeronautical Sciences, Inc., New York, has announced that Igor I. Sikorsky has been elected an Honorary Fellow and also has been chosen to receive its annual Sylvanus Albert Reed Award for 1942.

Conferred for "pre-eminence in aeronautics," the Honorary Membership is the Institute's highest and has been awarded to other persons. With the award went a citation "in creation and reduction to useful practice of a helicopter superior controllability." An amount of \$250 accompanied the honor.

At present engineering manager of the Vought-Sikorsky division of United Aircraft of East Hartford, Conn., Sikorsky well known for his development of the VS-300 helicopter, said in "controllability . . . in all directions of flight . . ."

Burden, aviation assistant to Secretary of Commerce; C. A. Ministrator C. I. Stanton, who addressed the meeting by telephone, being detained in Washington on necessary business; Irving Taylor, secretary of the American Chamber of Commerce; P. Morris, director of the Civil War Training Service (now Civil Pilot Training Program); Solomon, president of National Airlines and chairman of the Airlines War Training Institute; R. Ward, chairman of the Interdepartmental Air Traffic Control Board; Lieut. John R. Hoyt, acting for the Navy Bureau of Navigation, and Capt. Leonard J. Jurden, representing the Army Training Command, Ft. Worth, Tex.

### DPC Authorizations

Defense Plant Corp., subsidiary of RFC, has announced authorization for execution of three contracts: Increase in contract with the Square D Co., (Kollman instrument division), Elmhurst, N. Y., for additional plant facilities in New York, to cost more than \$200,000, and making total commitment for this purpose of \$800,000, and for contract with E. du Pont de Nemours and Co., Wilmington, Del., for a plant in New Jersey which will cost in excess of \$1,000,000.

Also announced were a contract with Sundstrand Machine Tool Co., Rockford, Ill., which will produce equipment in a plant in Illinois costing above \$200,000.

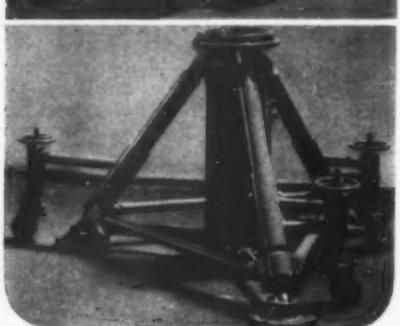
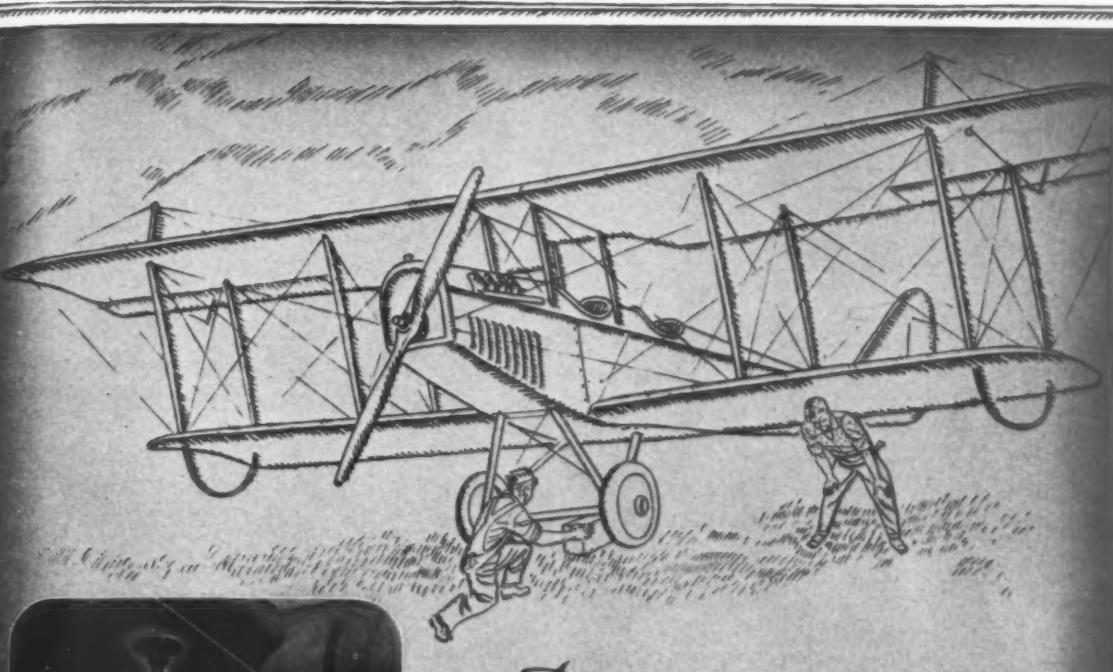
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AIRLINES—ARMY—NAVY—MARINES—MERCHANT  
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### General Motors

(Continued from page 50)

were laid to spread out orders to subcontractors and suppliers with the result that 350 outsiders were called on for 2,606 parts and assemblies, such as steel and aluminum forgings and castings, rivets, machine parts, etc.

"And over all was the necessity of training more and more and still more workers to achieve the eventual 500% employment increase over peacetime levels that has been set as the ultimate goal. To date more than 1,500,000 man-hours have been spent training workers, many of whom are women. In fact, because of military manpower needs, it is anticipated that 70% of all employees will be women when full production is achieved."

### Incorporations

**Delaware—Aeronautical Training Society.** To aid national defense and promote civil and commercial flying. Capital, none. Principal office, the Corporation Trust Co., Incorporators: R. F. Lewis, L. H. Herman and W. T. Cunningham, Wilmington.

**Delaware—Bolton Manufacturing Corp.** Machinery, planes, etc. Capital, \$1,000,000. Principal office, the Corporation Service Co. Incorporators: S. L. Mackey, J. Slaughter and H. Kennedy, Wilmington.

**New York—Van Dyke Airport Services, Inc.** Buffalo. General delivery service, \$10,000. Rann, Brown, Sturtevant and Kelly, M and T Building, Buffalo.



Haag

McGuiness

Metcalf

Tyndall

**R. M. Ellis**, formerly with Brewer Tichenor Corp. and Remington Inc., and for 20 years in research and product design, has joined Air Parts Development Corp., Summit, N. J., as chief mechanical eng

**W. R. Hucks**, manager, raw materials division, B. F. Goodrich Co., Inc., is on loan with the government's Rubber Reserve Co.; **R. G. McGuiness**, manager of planning and scheduling, tire division, has been assigned to the War Production Board, and **R. J. Hull**, ass't manager of composite division, will be on the staff of the Rubber Administrator.

**W. F. McGuiness** has been named a vice president of Elastic Strip Corp., Union, N. J. He continues as treasurer.

**Frank A. Haag**, formerly eastern manager, succeeds Paul R. Porte as manager of Kold-Hold Manufacturing Co., Lansing, Mich.

**D. U. Bathrick** succeeds **R. H. Grant** in charge of the Washington office of General Motors Corp., Detroit, Mich. Grant resumes his duties in Detroit and supervises the activities of the Washington

**Irving R. Metcalf**, formerly with the Allison division of General Motors Corp., Detroit, Mich., has been appointed technical director of the Allison division, Whiting Corp., Harvey, Ill.

**James A. Wales, Jr.**, formerly assistant service manager of Fairchild Aircraft Division, has been named assistant to the general manager of Fairchild Engine and Airplane Corp., New York, N. Y.

**A. M. Hall** becomes acting manager, **David Herman** plant manager. **C. P. Pape** contract administrator at the new Pennsylvania plant of Vultee Aircraft, Inc., Vultee Field, Cal. They were formerly on the staff of Consolidated Aircraft Corp., San Diego, Cal., assigned to its Texas plant.

**Samuel S. Tyndall** succeeds **John O'Hara Harte**, resigned, as manager of public relations for the Propeller Division of Curtiss-Wright Corp., York, N. Y. Tyndall was formerly coordinator of employee activities of that division.

**Raymond S. Livingstone** has been elected vice president in charge of personnel at Thompson Products, Inc., Cleveland, O. He continues direct employment, industrial training, labor relations, employee publications and social and athletic activities of the company's workers in six cities where it has plants.

**L. R. Howes**, previously a process and experimental engineer in various production divisions, has been named sales engineer for automotive and aeronautic departments of The B. F. Goodrich Akron, O., with headquarters in Los Angeles, Cal.

**H. E. Bingham**, formerly district manager of Arkansas Motor Lines and president of Associated Highway Carriers, has become manager of Pratt and Whitney Aircraft's Missouri plant.

**C. W. Hunter** succeeds **Stanley I. Vaughn** as factory manager of Curtiss-Wright Corp's Ohio warplane plant. Vaughn has been placed in charge of a new experimental department at the same plant.

**N. W. Forsythe** has been appointed general sales manager of Engineering Service Corp., division of Borg-Warner, Cleveland, O. He was formerly assistant general sales manager of Norge, another division of Borg-Warner, in Detroit.

**Harry Agerter**, former sales manager of Engineering and Research Corp., Riverdale, Md., and more recently with the Aircraft Protection Division of WPB, has been named general manager of the Kansas Division of Aircraft Components, Inc., Van Nuys, Cal.

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## MANUFACTURING

### Advertisers

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### Foley

(Continued from page 46)

then low capacity, high cost, unsatisfied operators.

We are not criticizing the manufacturers. They have done and are doing a splendid job from the quantity-production point of view. Even were they not so doing, this is not the place and we are hardly the party to proffer charges. What we are doing is sketching a possible means to an end for your consideration and disposition. If such a joint venture represents to all of us, as it does to some of our colleagues, a potentially valuable service to the entire aviation industry, then we are obliged to try to make it a practical working entity. If it is worthwhile and we want it to work, manufacturers' collaboration is vital and this collaboration can come only through an inversion of viewpoint by the manufacturer and the establishment of service and overhaul as a primary, parallel function on the same level as manufacturing.

The future of the technique hangs upon a single question. Do the manufacturers and operators alike feel that there is an industry goal which is best attained through the application of such a cooperative procedure? If not, then all the advantages offered may not even cumulatively offset the compromises required to effect the system. If so, then the manufacturer must get into the service phase with both feet, determining just what he can offer in the way of cost and speed and capacity and raising his sights until service and manufacture blend on a common plane assuring a brighter future through the interchange on-the-spot of men and ideas.

If so, then the airlines must erase their concepts based on sad past experience and possible lowered personnel morale and, studying the manufacturers' presentations, be ready to go along if the results show promise.

We offer both sides of this picture on a slate, to manufacturer and operator, and await their disposition. Which side do you favor and why? Make your own changes and let us read them. You want

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YEAR OF AMERICAN

### Cyclone Engine Production Up By Studebaker

Final production program on Wright Cyclone 1200 hp. engine in the Flying Fortress, will be three and one-half times greater than its original order for the cylinder type, Harold Vance, a man of the board, Studebaker of South Bend, Ind., recently revealed in discussing the firm's activities prospects.

First Cyclone came off Studebaker's assembly lines in Feb. 1942, Vance explained. Its production time were largely supplied by Wright, but Studebaker has been making more and more of them then.

Since the original engine was placed on Jan. 4, 1941, in 14 cylinder type, changes in needs and strategies have caused frequent additions to engine of Vance said, and Studebaker has three new plants at various locations. Final assembly is done at South Bend. In spite of constant accelerated production schedule Vance described Studebaker's quota.

Vance estimated total Studebaker sales of war goods in 1942, engines and automotive, at \$215,000,000, and indicated that the firm prospects on this volume less than one per cent. Overemployment at Studebaker total 16,000, and is expected to increase as much as 50% within the five months.

AMERICAN AIRLINES, INC., of New York Municipal Airport, Elmhurst, L. I., N. Y., reports to directors on Nov. 25 declared a quarterly dividend on the non-cumulative convertible preferred stock, payable Jan. 15, 1943, to holders as of Jan. 5, 1943. Dividend of \$2.50 share on the common was also payable Dec. 22 to holders as of Dec. 5.

REPUBLIC AVIATION Corp., Farmingdale, L. I., N. Y., has announced made on Dec. 23, 1942, distributed "adjusted compensation" to employees, amounting to not less than one-half of a year's base salary.

to scrap the whole thing? We argue with you on this now, send us the pieces with your part of the story.

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